SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF KINGS: CIVIL TERM: PART 13

CLYDE ANDERSON and MAXINE ANDERSON,
Plaintiffs,
-against- (T R I A L)

THE AMERICAN TOBACCO COMPANY, LORILLARD TOBACCO COMPANY, PHILIP MORRIS INCORPORATED, R.J. REYNOLDS TOBACCO COMPANY, LIGGETT & MYERS TOBACCO COMPANY, BROWN & WILLIAMSON TOBACCO CORPORATION, TOBACCO INSTITUTE, INC. and THE COUNCIL FOR TOBACCO RESEARCH-U.S.A., INC.,
Defendants.

Index No. 42821/97
May 15, 2000
360 Adams Street
Brooklyn, New York 11201

B e f o r e:
HONORABLE HERBERT KRAMER,
J u s t i c e , and a jury.

A p p e a r a n c e s: (Same as heretofore noted.)

EILEEN McLOUGHLIN, C.S.R.,
ROBIN BATES, R.P.R.
MICHAEL D. ISAACOFF, C.S.R.
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M O R N I N G S E S S I O N

(The following takes place outside the presence and hearing of the jury:)

MR. QUIGLEY: Your Honor, we have some orders embodying your rulings on Friday.

THE COURT: Then you got to see Jane, because I think she is working on that.

So, why doesn't somebody go upstairs and give that to Jane.

MR. LONDON: Can we see a copy of them?

MR. MOLLON: Yes. I am giving it to you right now.

MR. LONDON: Your Honor, with respect to one of these orders --

THE COURT: Which one?

MR. LONDON: They have embodied that, or the proposed order says, is denying plaintiff's consolidation motion, joint trial consolidation motion.

THE COURT: When did that happen?

MR. LONDON: That's my question.

MR. MOLLON: While we were on Friday before your Honor, I thought where we had left off was your Honor had requested information about all of the other plaintiffs to select, eight different plaintiffs.

THE COURT: Yes, but that's not a denial of motion. That's being held in abeyance.

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MR. MULLEN: We can withdraw that, with the understanding there was going to be another motion as to other plaintiffs.

THE COURT: No, there is going to be more information. When you bring up a good point, I look for more information.

MR. QUIGLEY: We will withdraw that.

THE COURT: Is that a separate one?

MR. MOLLON: Yes, they are separate orders.

MR. LONDON: I just want to make sure that that one accident --

MR. MOLLON: We will withdraw that.

THE COURT: I have one question. Who is going to be the lead on that, is that you, Mr. Quigley?

MR. QUIGLEY: On what, your Honor?

THE COURT: On the first cross-examination.

MR. QUIGLEY: It depends. We don't know yet. It will be either Mr. Kaczynski or me. It depends on the good doctor's testimony.

Have no fear, though, I will ask a few questions.

THE COURT: I don't have that fear.

COURT CLERK: Do you want the jury?

THE COURT: Yes, I do. Bring them in

COURT OFFICER: Ready for the jury?

THE COURT: Yes, I am.

COURT OFFICER: Jury entering.

(Whereupon, the jury enters the courtroom, and the following takes place in the presence and the hearing of the jury:)

THE COURT: Good morning, everybody.

Since it's fairly cool outside, the air conditioner is working very well.

Go ahead, counsel.

MR. FINZ: Dr. Farone, please.

W I L L I A M A N T H O N Y F A R O N E ,

residing at 411 East Julianna Street, Anaheim, California, a witness called on behalf of the Plaintiff, upon having been duly sworn, was examined and testified as follows:

THE CLERK: Please give your name and address, first name and last name, and spell both, please?

THE WITNESS: William Anthony Farone, F-a-r-o-n-e, [DELETED].

THE COURT: Counsel?

MR. FINZ: Thank you.

Good morning, ladies and sir.

Good morning.

DIRECT EXAMINATION

BY MR. FINZ:

Q Doctor, for the benefit for those of us who may not have heard your name distinctly, I'm going to ask you to keep your voice up, and will you be good enough to, please, spell it out for us again?

A F-a-r-o-n-e.

Q F-a-r-o-n-e; William Anthony Farone; correct?

A Correct.

Q All right.

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Q Now, Dr. Farone, so that we can learn more about you, I'm going to be asking a series of questions concerning your background and your experience. And, as we have done in the past, I'm going to do it rather slowly, so that everyone can get the benefit of your information.

I'm going to ask that you keep your voice up as much as you can. Would you do that, please, sir?

A I will.

Q Thank you. Now, Dr. Farone, would you tell us, first of all, what is the year of your birth?

A 1940.

Q So that, you are, approximately, 59 or 60 years of age?

A 60.

Q 60 years of age, all right. And, sir, where were you born?

A Cortlandt, New York.

Q And, could you tell us, did there come a time when you were raised in Cortlandt -- were you raised in Cortlandt, New York?

A No, I was raised in Syracuse, New York.

Q All right. And where did you go to high school?

A North Syracuse Central High School.

THE COURT: Can we avoid high school? Let's go on.

MR. FINZ: It becomes important, Judge, for this purpose, for this purpose. Thank you.

Q Now, when you were in your senior year of high school, sir, at that time, did you participate in a New York State science program?

A I did.

Q And would you tell us, please, first of all, what was the name of that New York State science program?

A Well, it's the New York State Science Fair Program.

Q And what is that, or what was it?

A Students from different high schools are selected to present their science projects at a general meeting or conference.

Q And students from what high school, sir?

A All over the state.

Q And how many high schools did that encompass?

A I have no idea, but it was hundreds, I'm sure.

Q All right. And, ultimately, what happened with respect to these students, and what was the purpose of this science fair, what is it that they are trying to select?

A Well, in those days the science fair was sort of like a place where the administrations for different colleges would go to select students to go to college. And you would present your project. And awards were given for the projects.

Q And was there a single person selected as having presented the best science fair or science program in the entire State of New York at that time?

A Yes.

Q Now, I'm going to -- I know you are a soft, gentle, and a modest man. And I'm going to ask that you keep modesty aside.

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Was this a highly competitive program?

A It was.

Q And was this a program that was being viewed by many people within science in the State of New York and the Universities of the State of New York?

A Yes, it was. One of the purposes was sort of an audition to go to college.

Q And, therefore, they selected the best presentation, or the best person who made the best science presentation out of all New York State, is that correct?

A The best presentation, yes.

Q And who is the person that was selected as the number one in the entire State of New York at that time?

A I won the award.

Q And the award was won in what kind of scientific activity?

A My senior year in high school, I was allowed, very fortunately, to go to Syracuse University and prepare chemical synthesis.

I synthesized a chemical.

Q You got to tell us, what is chemical synthesis?

A Well, chemical synthesis is where you go into the laboratory and, from a series of simpler molecules, you make a more complicated molecule.

Q What's a molecule?

A A molecule is the simplest form of nature that still retains the physical properties of that form of nature. Like, the smallest molecule of water is a molecule, H2O. That's the smallest thing. If you take that molecule further apart, it no longer behaves like water.

So, a molecule is the smallest substance, piece of a given material.

Q And when you won that award, sir, how old were you?

A Sixteen.

Q And, sir, prior to your winning the award, was it -- were you going to college?

A No, I had no idea of going to college.

Q Could you tell us why?

A My family couldn't afford it.

Q What did your father do?

A He was a truck driver.

Q And what did your mother do?

A A waitress.

Q A what?

A A waitress.

Q Now, having won this a ward, did this open up a scholarship for you within the college environment?

A Yes, that plus my grades. I was offered scholarships at Syracuse University, Clarkson University, Rensselear Polytechnic Institute, Massachusetts Institute of Technology.

Q In Boston?

A In Boston. And Colgate University.

Q And, sir, did you make a selection?

A I did. I went to Clarkson University, in northern, New York.

Q Was there any purpose, any reason that you selected Clarkson from all of the others?

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A Yes, it had an excellent science and engineering program, but, besides that, my high school teacher, who was the one that had suggested that I do this project, went to Clarkson. And, so, I thought, if he went there, that would be a good place to go.
Q All right. And did you attend Clarkson, sir?
A Yes, I did.
Q And what course of study did you pursue at Clarkson?
A In the beginning, I majored in three different things: Electrical engineering; chemical engineering; and chemistry. And in my junior year I selected.
Q Before we get beyond that, okay, you say

chemical engineering was one?
A Electrical engineering.
Q Electrical engineering was one. And the third was what?
A Chemistry.
Q Chemistry.
Would you tell us, please, sir, we all have an understanding, generally, what chemistry is, but could you elaborate for us, what is chemistry?
A Generally, we divide the world up into, and science, into, approximately, three --
Q You have to keep your voice up, sir.
A Yes -- three areas.
We talk about physics, which has to do with physical properties, such as the laws of motion, and gravity, and astronomy, and things of that type.
And we talk about chemistry, which has to do with chemical interactions, that is how various substances come together, how you make iron from iron ore; how you mine gold; things of that type.
And then there is biology, which has to deal with living substances.
And then we have what we call interrelations, like there is biochemistry. That's chemistry as applied

to living substances. And there is biophysics. That's physics as applied to living substances.
Q Now, sir, when you attended Clarkson University, did you, at that time, have a career goal in mind?
A Yes, I did.
Q And what was that career goal?
A I desired to go into research and development.
Q What does that mean, "Research and development"?
A Well, if you look at things that we're familiar with, products that we run across every day, the question is: How does that product, or how does that material get to be the way it is?
And, in the beginning, there is the development of that, which is preceded by research. You do research to determine all of the properties of something. And then, from research, you develop it into something that is practical and useful.
So, my interest was in applying chemistry and physics to things that were useful, practical.
Q Now, sir, did you complete Clarkson College?
A I did.
Q And did you receive a degree from Clarkson College?
A I received three degrees, actually; but, yes.

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Q Well, let's talk about the first degree that you received. What was the first degree that you received from Clarkson College?

A Bachelor of Science, in chemistry.

Q And, sir, what year did you receive that degree?

A 1961.

Q Having achieved a Bachelor of Science in chemistry at Clarkson, what did you then do, with respect to the pursuit of your academic career?

A I began, immediately after my Bachelor's Degree, my graduate program.

Q What program was that?

A Graduate program in the -- I enrolled in the Doctor of Philosophy, or Ph.D. Program at Clarkson.

Q Now, was there a combination program?

A Well, as you work toward your Doctor of Philosophy, or Ph.D., frequently you obtain a Master, a Master's Degree along the way, which I did.

Q And, in order to do that, sir, did you have to maintain a certain scholastic average, to qualify for that program?

A Yes. You had to be selected for the program.

Q And, sir, was this a selection that was made by professors within the university itself?

A Well, for the program, I was selected, not only by the professors, but by the Federal Government. I received a National Defense Education Act Fellowship, because, again, the only way I could have gone to graduate school was with a fellowship.

Q And could you tell us, please, what is a fellowship?

A Well, in that particular case -- well, in most cases, a fellowship pays part or all of your way through your education.

Q And how is it that you, sir, were selected as one of the persons to receive a Government fellowship?

A In my undergraduate career, I did some research work that came to the attention of -- actually, it was the Department of Defense that awarded this fellowship so that I could go to graduate school.

Q And, sir, what did this fellowship training consist of?

A Well, as part of the fellowship, they paid for, not only going to school, not only living, but they also paid for the equipment that I used to do the research, and they paid for the purchase of various chemicals and things that I would need, and provided the school with some money to support my research.

Q And what, if anything, did you learn, generally speaking, as part of your fellowship training?

A Well, the work that we did, that I did in the fellowship training ended up, ending up in some, I don't know, I can't remember now, but some seven or eight publications that were published in the scientific literature.

Q And where did you actually have this fellowship training, sir?

A In Potsdam, New York, Clarkson University.

Q Now, did there come a time when you did receive your Master's Degree?

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A I received a Master's Degree in 1963.
Q And in what course or what subject did you receive your Master's Degree?
A Chemistry.
Q And, sir, did there come a time -- in order to receive that degree, was it necessary for you to write what is known as a thesis?
A Actually, that was required for the Bachelor's Degree, too; but, yes, for the Master's Degree you have to write a thesis.
Q Would you tell us, please, what is a thesis?
A A thesis is a summary of an original piece of

research work, something that has never been done before. You have to do it; and then you have to write about it; and explain it to the faculty, to the professors and the other people at the school.
Q And, sir, what was the subject of your thesis?
A My Master's thesis or my Bachelor's thesis?
Q Let me take your Master's first.
A Master's thesis subject had to do with aerosols, had to do with determining the physical properties of an aerosol.

Aerosols are very small particles that are suspended in air or water, like cigarette smoke is an aerosol.
Q And did you have that thesis ultimately published?
A Yes, it was. Well, it was published in more than one paper. My thesis ended up resulting in three or four publications.
Q What was the title of that thesis?
A The title of the thesis had to do with, "Electromagnetic Scattering From Long Dielectric Cylinders."
Q It had a long scientific name?
A It had a long name, yes.

Q Now, following that, sir, did you then pursue a thesis toward your doctorate or your Ph.D.?
A I did.
Q And what was your thesis in your Ph.D.?
A It carried that research to the next level of complication. Originally, we were interested in objects, other than spherical objects.

In some aerosols, like cigarette smoke, the objects are spheres, they're round, okay?

One of the concerns has to do with what happens when they're not round, when they're like needles, cylinders?

And, so, that was the basis of my research. It had to do with things that might be in air or in water that weren't round, that they were like needles.
Q And, sir, was the work that you did in your thesis being supervised by a professor, at that particular time?
A Yes, it always is, yes.
Q And is that the normal protocol when one is going toward a Ph.D.?
A Yes, it is.
Q And was your thesis approved?
A Yes, both Master's thesis, Ph.D. thesis,

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Bachelor's thesis, yes.

Q And was your thesis towards your doctorate program ultimately published?

A Yes, it was.

Q And could you give us the -- probably a long sounding title again, but?

A Well, as I say, there was more than one publication, and they all had to do with determining the properties of these materials by not having any other information but the light that was scattered from them. So, you could look at light that came from these aerosol objects and, from examining that light, you could determine the physical properties, how big it was, and where it was located, and a thing called its refractive index, that is the property of the material.

Q Now, sir, was the scientific research that you had done during your college for your Master's program and for your Ph.D. related in some way to cigarette smoke in the atmosphere?

A Yes, it is.

Q And, in a very very broad sense, would you just tell us -- we'll get more specific as we go along -- but, just give us some general relationship of that kind of study that you had during those periods of the time that

you were attending and cigarette smoke? Just give us an idea.

A Okay. When you burn anything, including tobacco, what happens is you turn first into vapor, you vaporize it. And then, as it gets a little bit cooler, behind where you burn it, the material starts to condense, and it condenses into droplets.

Q What do you mean, "condense"?

A Turn from a vapor to a liquid. It turns into little liquid droplets. It's like fog, for example.

Q What caused that to happen?

A The reduction in temperature. If you take something, like water, you can't see it, it's vapor, it's steam, and we cool the room down, like you see in the morning.

Q How about a warm windshield and cold car with air conditioning?

A That will do it. On the mirror in the bathroom, if you take a shower, sometimes you can see it. And that can happen in the air. And if it does that, it's like a fog or like a mist.

And that's how aerosols are formed, from combustion, from burning things. And, so, the properties of that aerosol, you have little particles in there with

different sizes, some small ones, some bigger ones.

And we, generally, want to know how many of each size. We want to know about the size distribution, we call it. We want to know what they're made of. Are they all the same; or, are the little ones different than the big ones?

And, so, that was part of the research, is to determine whether the physical properties of the small ones and the chemical properties are the same as the big ones.

Q And is that the kind of information that you can use as a basis of your experience in tobacco smoke?

A Of course, because tobacco smoke is an aerosol.

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Q Now, sir, following your Ph.D. -- by the way, the Ph.D. Degree, is that the highest academic degree that anyone can receive in our academic institutions?
A Yes.
Q That's the highest?
A Yes.
Q You can't go higher than a Ph.D., is that correct?
A No.
Q And that's the degree that you have, sir, is that correct?

A Yes.
Q And, as a consequence of having a Ph.D., is it appropriate to call you, "Doctor"?
A Yes, it is.
Q Now, Dr. Farone, after you received your Ph.D., and you had your thesis that you described published, what did you then do thereafter, in furtherance of your professional career in chemistry?
A Well, for one year -- actually, my field of expertise is called physical chemistry.
Q What does that mean, "physical chemistry"?
A It's a combination of physics and chemistry. We deal with chemical properties and material. And we're interested in how they change their physical properties.
For example, boiling point. The boiling point of something is a physical property, okay? And you want to know how the chemical property, for example the size of this molecule we were talking about before --
Q Can you keep your voice out here, so we can hear you, Doctor, as well?
A -- how the size of the molecule affects where it's going to boil, the physical properties.
So, this is a physical property, as determined by the chemistry of the molecule.

Q All right. Now, after you received your Ph.D., what did you then do?
A For one year, I worked for the Department of Defense, at White Sands Missle Range, studying the atmosphere.
Q Now, how did you happen to get that particular position?
A Well, the research work that I did required the use of computers, and our university only had a small computer at that time. This was in 1961 through 1964. And the Government laboratories had the large computers.
So, I needed to go to a place where they had very large computers, to be able to continue my research work.
Q And did you make application for that position, or were you asked to join them?
A I was asked to join them.
Q Who asked you to join them -- I don't mean the individual, but the type of person?
A It was the Department of the Army, the Electronics Command of the Department of the Army, in the Department of Defense.
Q And where did you actually go for that particular position?

A White Sands Missle Range, in new Mexico.

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Q And for how long a time were you there?
A I was there for a year, until I completed the research work that I was involved in.
Q And, just basically, what was the relationship of the research work that you did there, in connection with the atmosphere and the aerosols, the knowledge that you gained, was that, thereafter, used in cigarette smoke, for example?
A Okay. Well, the atmosphere is a place where we have aerosols all the time. Clouds, for example, is a form of aerosol droplets. And dust gets kicked up from the ground; that's a form of an aerosol, also.
And the Government was very interested in this, not only from the aspect of polution, but also from the aspect of how this influenced radar, things like being able to see airplanes when it was cloudy and foggy.
So, now, we're looking at how the aerosols, the dust or the clouds, affected other things, like your ability with radar to see an airplane.
So, the Government was very interested in that. And I was able to help them solve some very interesting problems concerning the use of radars that were confused by aerosols.

Q Now, and following that experience with the United States Government, sir, what did you then do in furtherance of your career?
A I became an Associate Professor of Chemistry at Virginia State College, now it's called Virginia State University, in Petersburg, Virginia.
Q Well, would you tell us what year was that?
A 1965.
Q And would you tell us, please, what kind of university the University of Virginia was, and what kind of school Virginia State College was, and its relationship? Just tell us about that.
A Well, 1965 was the year after the Civil Rights Act. And Virginia State College, at that time, was part of the segregated system in Virginia.
And what, in 1965, what happened was the desire to integrate both the University of Virginia, which was the white school, and Virginia State College, which was the black school. And, so, Virginia State College offered about seven of us the opportunity to go there and begin a research, or begin our programs, our academic career, if you will, at the college.
Q And did you accept the appointment to become a Professor at Virginia State College?

A I did.
Q And, sir, could you tell us, please, what is the position or title that you received when you accepted this appointment to become a member of the faculty of Virginia State College?
A Well, my title there was Associate Professor of Chemistry.
Q And, sir, with respect to the experience that you had there -- first of all, was it a well-equipped school?
A No.
Q Give us some background as to that, sir?
A Well, the university system in Virginia had several campuses. And Virginia State College was not a

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very well-equipped school, which, actually, in some ways, is a good thing.

We were able to bring equipment in with our research grants. And when you teach in a school which is not well-equipped, what you have to do is to build a lot of your own equipment. And that was very very useful, both for me, as a professor, and for the students. Because, in some schools, you go in, the equipment is there, you turn it on, you use it, and you know how to twist the knobs. Whereas, if you have to build it, and

build it into pieces -- from pieces that you buy, then you gain more experience with how it really works.

Q And what is, just by way of some examples, what are some of the things that you did with the students in building equipment that gave them a better insight into science and gave you a broader insight into what you were doing with respect to science?

A Okay. We had a major program, research program for the study of aerosols, for the study of air polution. And the funding for that program came from the National Institute of Health and two other agencies.

When we study it, using the scattering of light, that was the subject of my Ph.D. thesis, we can use relatively simple equipment. You have -- at that time, lasers were brand new. So, we were able to buy lasers and use the lasers.

Q What is a laser?

A A laser is a light source that provides a highly culminated, we call it, highly focused degree of light.

So, the laser light sources we were able to purchase, separate. We would shine those onto the aerosol area that we were looking at.

And then, we would by detectors, photo electric detectors. They would look at the reflected light, the

light that shines off the particles. And we would connect that to various meters that we were able to buy.

And, so, it's the kind of equipment that you could actually build from scratch, without having to go out and buy somebody's equipment that was already manufactured that did this.

Q Did you find that to be a good learning experience for these students?

A Well, I think they enjoyed it very much. We, actually, ended up publishing several papers with the students. I had five graduate students during the period of time I was there.

Q And did you collaborate with some of the students of Virginia State College in some of the papers that you actually had published?

A Yes.

Q Could you give us the names of one or two?

A One was Matthew Robinson; and another was Christine Darden.

Q And these were students of yours?

A Yes.

Q Now, did you follow the careers of any of the students that you actually taught as professor?

MR. QUIGLEY: Your Honor, I'm going to

object. This is interesting, but, I submit, it's not relevant.

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THE COURT: Well, we can use some interest, too.

Let's go on, but let's move along after this.

MR. FINZ: I will. I'm through in another few minutes on this, Judge.

THE COURT: Yes. Go ahead.

A Yes, I did.

Q And tell us some of the careers that some of these young people that you actually taught at Virginia State College, where did they go on?

A One became a Professor of Mathematics; he went to New York University. One got a Rhodes Scholarship; he went to England. Another one was honored as being -- Christine Darden, who I mentioned earlier, was honored as being one of the highest-ranking female employees at NASA, at one point in her career.

Q Fine. And did you follow any others, in any other places?

A Well, actually, I found out about Christine Darden at the Black History Museum, in Atlanta. My daughter, adopted daughter, who is black, took me there

because she wanted to show me what was there.

In fact, I was amazed to find out that this young lady, who I had taught, who went on in the same kind of stuff, she did more aerosol work and things of that sort, is listed in there as having been very successful at NASA.

Q I'm sure this gave you a great sense of pride?

A It certainly did.

Q All right, sir. Now, for how long a time did you remain at the Virginia State College?

A Two years.

Q And after the two-year period at Virginia State College, where did you then go?

A I went to work for Lever Brothers Company.

Q And would you tell us what a type of company Lever Brothers Company was in 1967?

A Lever Brothers Company is a consumer products company, and they sell a very wide range of products, that I am sure most people are familiar with.

Q Give us an example of a few.

A Concentrated All Detergent; Aim Toothpaste; Close-Up Toothpaste; Wisk Detergent; Dove Bar Soap; Caress Bar Soap; Mrs. Butterworth Syrup; Lucky Whip whip cream; Promise Margarine.

Q Now, sir, what was your role -- you ultimately took a job at Lever Brothers, is that correct?

A I did, yes.

Q What was your role with Lever Brothers when you first joined them?

A I had several of them. The first position was sort of a senior research position, where I worked in the laboratory with several other chemists, who worked for me.

Q And what was your responsibility, generally, with respect to these consumer products?

A In the first position?

Q In the first position?

A I was involved in trying to research some of the properties of these products. For example, in toothpaste, take a simple example. When you use toothpaste, what

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people don't realize is that, besides the amount you spit out, you swallow some of it, and some of it stays on your teeth.

And one of my first research projects was to help determine how much of it stayed in your body, as opposed to --

Q Why was that important?

A Well, because the safety properties of the material, of using the toothpaste, would be determined by

how much of it stayed in your body and how much of it you expelled and spit out at the end of your use of the toothpaste.

Q And, with respect to its safety components, why would that be important?

A Well, toothpaste, some of them, they have ingredients in them that are drugs, like fluoride, for example, is. In fluoride toothpaste, the abrasives, you are going to swallow some of that, and we know something about the safety properties of that, and it's important to know how much of these different ingredients you swallow, to understand what effects it may have on your body.

Q Now, sir, as part of your program as a scientist -- you came in as a scientist, am I correct, sir?

A Yes, I did.

Q As part of your program, were you involved with the safety of consumer products for Lever Brothers?

A Well, as I -- the further into the program that I stayed, yes, the more involved I became in that, worrying about the safety of the products.

Q Now, what was the reason for the concern about the safety of products, generally, of consumer products?

A Well, there are two things. There is how a

consumer uses a product, the way it's intended to be used. And then one worries also about possible things that can happen along the way, like, going back to the toothpaste example, not everybody puts the same amount of toothpaste on their toothbrush. And, trying to understand how much they put on, and how they use that product, is very important to understanding how to make the product do what it's supposed to do. Those toothpastes do several things, not only do they clean your teeth and brighten your teeth, they're also supposed to help reduce the risk of caries, you know, cavities in your teeth.

So, you need to understand how the chemicals that are in there, that are supposed to reduce the cavities, which is the fluoride, how that gets into your tooth, how that works, what happens to it in your body, all of that. You need to know that.

Q Was it necessary to learn about the chemical composition of a consumer product in that case?

A Absolutely.

Q Was it also important for you to know what the safety connotations or what the safety position was of that particular product?

A Yes.

Q And was it important for you to identify the

various components of the products that were going out to the consumers?

A That was essential, absolutely essential.

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Q Now, sir, beyond when you first joined, what was the title that you received with Lever Brothers?
A The first title that I had?
Q Yes.
A Something like Senior Research Associate, something like that.
Q And, sir, how long did that last for that title?
A About two years.
Q And then, following that, what did you do?
A I became the Manager of New Products Development.
Q And what does that mean, "New Products Development," and the manager, just give us an idea of the overall work that you did with consumer products?
A Any company that sells consumer products, like Lever Brothers, is interested in selling more. So, the object is we're going to develop some new products. And, so, I managed the development of new food products, new shampoos, new kinds of toothpaste, new kinds of soap.
Q Now, in connection with these products, were you also concerned with the safety of these products?

A Yes.
Q In what regard?
A Well, Lever Brothers maintained a complete, what we call toxicology or safety laboratory, where all of the ingredients in the products and the products themselves were tested, not only for how well they worked, but, also, for their safety, to make sure, for example, that there was no, nothing in the soap that was going to irritate your skin, rather than just clean it.
Q And how would they make the determination? When I say, "How," I mean from a scientific point of view. You were in charge of the scientific research and the scientific testing that was being done?
A Well, that came later. At this point --
Q All right.
A -- I was in charge of developing the product. And I was working with the people who were making the safety evaluations.
Q There came a time where you now became the overall chief in charge of the safety of these products?
A That's correct. In 1972, I became Director of Research, Director of Scientific Research at Lever Brothers. And, at that point, the Safety Department, both Microbiology and Toxicology, reported to me.

Q Now, what is microbiology?
A Well, microbiology has to do with the study of microbes. Those are bacteria -- yeast, fungi of all types, like molds and spores. And that's another concern in a product. I mean, you don't want to sell a food product, for example, that is moldy or that has bacteria in it.
Q And what about, what is toxicology?
A Toxicology is the study of the toxicity of all of the materials of everything. The toxicity, that could be toxicity to people or toxicity to the environment.
Q And, sir, what, if any, role did you have with respect to consumer products, as they pertained to safety, as a Director of Research?
A I was the senior signatory on all of the tests. In other words, before a product could go out into the

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market, I would have to sign my name to approve of all the research that was done on the safety testing of all those products.

Q And, sir, why was it important to have a safety program?

A It's essential that the products that are being sold are understood, in viewpoints of out how they are going to affect the users of that product.

Q Understood by whom?

A Understood by the company that is selling them.

Q And understood by whom? Who is buying them?

A The consumers.

Q Now, give me an example of a product, for example, where you would have a safety program, something that could be hazardous, for example, to a consumer, in a general sense?

A Okay. If you think of what things you might have in your kitchen or in your washroom, you know that on the side of the boxes of detergent, there are instructions that tell you how to use it. There are also, if you look, warnings, for example, telling you, "Don't mix it with this, don't mix it with that, don't get it in your eyes."

So, there is educational material there. And the warnings, for example, the eye irritation warnings that appear on some products, are the subject of having actually tested those materials in animals in the laboratory, and, sometimes, even in humans, to study the effects of those materials. So that, those warnings can be put on there to make sure that you don't make the mistake of putting the product in your eye. You all know that shampoos, some of them are okay to get in your eye, some of them aren't.

So, that kind of testing is what we do.

Q Now, you said something about animal testing. What was the importance of animal testing, with respect to the safety of the product and the ultimate warnings that appeared on the packages?

A Well, of course, we're interested in what the safety is to the ultimate animal, that is the human. But, you can't test new products on humans, not initially. So, what you do is you try to determine what animals and what models -- they are called animal models -- would predict the outcome on a human. So, for example, you might put toothpaste on a guinea pig's skin, and see whether the guinea pig's skin had a rash or a blister. And, if it did, then you might conclude that if you put that in your mouth, on your gums, it would cause that same kind of rash or blister.

So, by using these animal models, we're able to predict what would happen if that same set of chemicals were provided to a human.

Q And was this type of use or protocol with animals, was this something that was within the scientific community, was it known within the scientific community at that time?

A Oh, of course, yes.

Q Had it been used within the scientific community for years and years before that?

A Yes, for years, yes.

Q And was it a recognized use of testing products,

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that is using animals to test products?
A Yes.
Q And were animals good models for the purpose of testing products?
A There are different ones. And what you have to do is use more than one model. So, you wouldn't just use -- I gave an example a few minutes ago of the guinea pig's skin, for toothpaste. Well, we wouldn't just use guinea pigs, for example. We would use rats. And we would use mice. We would use multiple animals, multiple models to get at the problem from many directions, look at it many different ways.
Q Now, what about, did you ever use any models with respect to anything affecting the eyes?
A Oh, yes.
Q Tell us about that?
A Well, the normal testing that is done on things that might get in your eye starts off usually with a rabbit. And the reason they use rabbits is because rabbits don't tear. They don't have lacrimal or tear

ducts. So, if you put something in a rabbit's eyes, they can't tear it and wash it out right away. So, you can measure the irritation.
Now, that's kind of a severe test. But, if the rabbit doesn't show any irritation, then you know for an animal that has tear ducts, a primate, or human, that you are likely to have less problems.
So, the first screening test, we call it, was using the rabbit's eye. After that, if the rabbit's eye showed irritation, you still don't know whether the human might wash it out or not. So, we would go to use primates, monkeys. We would use primates, and see whether or not -- because they tear like we do -- and see whether or not the irritation would still develop.
Q Is this what scientists, such as yourselves, call biological testing?
A Yes, it is.
Q Biological laboratory testing?
A Yes.
Q And this was accepted within the scientific community?
A It's necessary to determine the effects of your problem.
Q And how far back did that type of testing go

within the scientific community, not only for these consumer products, but for all consumer products?
A Well, I don't know exactly when it started. It was well used in the '30s.
Q 1930s?
A 1930s.
Q And would cigarettes be considered a consumer product?
A Yes.
Q Now, sir, how long did you remain with Lever Brothers?
A Eight years.
Q And in the eight years, you had people who worked under you, is that correct?
A I did, yes.
Q And you directed testing just as you described, is that correct, sir?

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A That's correct.
Q And did you familiarize yourself with the standards of safety within the industry?
A I did. We had to. We were involved in helping set those standards with various committees, with various Government agencies. We worked very closely with the Food and Drug Administration, the Environmental Protection

Agency, the Consumer Products Safety Commission.
Those were the main agencies that we worked with, to help set some of the standards.
Q And how important was safety, during the period of time that you were a scientist with Lever Brothers?
A That was -- I would say that Lever Brothers spent more money on safety testing, biological safety testing, than any other thing they did.
Q Given that training, sir, would you say that you were trained in safety with consumer products?
A I lived and breathed it for the entire eight years, particularly the last four, when I was, my signature was on the line for approving of all of the materials that Lever sold.
Q And in order for you to sign, would it be necessary for you to analyze every paper that came before you, so that, if you signed, you had the responsibility of the ultimate test, isn't that correct?
A That is correct. I had to review the research that was done, talk to the people that did it. We would inspect the laboratories where it was done. We would make sure that the methods -- there are things called good laboratory practice, where we have to follow certain rules; and we would do that.

Q Now, sir, there came a time where you left Lever Brothers, is that correct?
A That's correct.
Q And tell us now, did someone contact you while you were at Lever Brothers in connection with another position?
A They did, yes.
Q What was that, sir?
A I left Lever Brothers to become Vice-President of Research and Development at a company called Pacific Vegetable Oil International or PVO, I think was the actual name, PVO International.
Q Very briefly, what kind of business was that what was your role, and what were your job duties, very briefly?
A Vice-President of Research and Development. I was in charge of all of the research and development dealing with the products they made. And that was one company before the consumer product company. In other words, this is a company that, who sell its chemicals to the consumer product company for use in detergents, and soaps, and face creams, and all of that stuff.
Q And did you familiarize yourself with all of the safety measures involved, sir?

A Yes, especially since, in that job, we dealt with pharmaceutical companies, and we had to supply the chemical ingredients that were going to be used in drug, in pharmaceutical products, or in drug products.
Q And had you familiarized yourself with all of

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the chemicals that were being used in those products, in addition?

A Yes.

Q Now, sir, how long a period of time did you remain Vice-President in Research and Development?

A Only one year.

Q Now, following that, did there come a time when you received a message or a call from some other source in connection with another position?

A Yes, I did.

Q And would you tell us about that, please?

A I was contacted by, what's known as an executive search firm, for a very interesting opportunity, I was told. And I entered into negotiations with them. And that turned out to be Philip Morris.

Q Now, sir, what year was that?

A It was the end of 1975.

Q Now, sir, did there come a time when you actually were put together with executives of Philip

Morris in the interview process?

A Yes. In the early part of 1976, I interviewed with Philip Morris.

Q And with whom did you interview?

A Oh, it's a list of seven or eight people, vice-presidents, directors. I met the president of the company. Names: Dr. Robert Seligman. Dr. Seligman was going to be, become my boss, if I took the job to go there.

Q And what was his title?

A Vice-president. And he was going -- at the time I interviewed with him, he wasn't the Vice-President of Research and Development, but he was going to become the Vice-President of Research and Development. And I was offered a position to work for him when he became the Vice-President of Research and Development, which was going to be later in 1976.

I met the president, Mr. Clifford Goldsmith. I met the then Vice-President of Research and Development, Dr. Helmut Wakeham. That was down in Richmond.

Q We heard the name Wakeham before during the course of this trial. What was his position?

A At that time, he was the Vice-President of Research and Development.

Q Now, sir, during these interviews, were you told what the job would entail and what your responsibilities would be as a scientist with Philip Morris, if you would, in fact, accept it, and if, in fact, you were hired?

A Yes.

Q What were you told?

A I was told that the opportunity was, for the first year, that I would report and work for Dr. Seligman. I would be allowed to learn as much as I could about everything that Philip Morris did.

Q How would you do that?

A I would go talk to the scientists doing the work. I would visit all of the manufacturing plants, their production plants. I would visit the fields where tobacco was grown. I would visit the auctions, where they purchase tobacco. I would visit the warehouses, where they were stored. I would be given full access to all of the company, so that I could learn how the product was

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purchased, manufactured, tested, right from beginning to end.

Q And were you also told that, during that first year, you would be expected to learn everything there was to know about manufacturing and designing cigarettes?

A Yes, I was. And, specifically, they were

unhappy that their research and development wasn't tied closely enough to their manufacturing and their production.

And, so, the object of my learning that was that at the end of a year, when I would be promoted to a different position, I would be able to understand how to make the research that we were going to do fit in better with what was being done in the production and the manufacturing processes.

Q Now, was there any concern that was expressed to you by these executives, the Vice-President, and the President, or others, concerning cigarette smoking, at that time?

MR. KACZYNSKI: Objection; leading, your Honor,

MR. QUIGLEY: Objection, your Honor.

THE COURT: Come up.

(Conference at the bench, off the record.)

Q Now, sir, during these conversations when you were being interviewed, were you asked about, "Well, what would I be expected to do?" Would that be a normal question you would ask?

A Yes.

Q And there would be a normal response to that;

correct?

A Correct.

Q When you were told that you would be expected to learn everything there was about cigarettes, what were you told with respect to how far you would go back in time in order to acquire that information?

A I was told that I could read and go into any of the available documentation that they had, and talk to the people. And my understanding of the documentation went back into the 1930s.

Q To the 1930s?

A Yes.

THE COURT: So, you are going back some forty years, right?

THE WITNESS: Yes.

THE COURT: Okay.

Q Now, what, if anything, were you told with respect to cigarette smoking itself?

A There was a concern due to the health consequences of smoking, that the product might not stay on the market for a long period of time.

So, the two facets of my employment were, number one, diversification, that is to help the company get into other businesses; and, number two, to help make the

product safer for the consumers to use.

Q And what was the concern about making it safer?

A The concern was that it was causing a significant number of deaths due to cancer, and emphysema, and other problems, cardiovascular problems. And there was a concern that to have a product --

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THE COURT: One moment. I'm having a little problem here: The only thing I am going to allow is for you to directly quote somebody in authority, and directly quote them, name them, and directly quote them. I don't want these general concepts.

So, I'm going to strike that last answer.

MR. FINZ: Thank you.

Q Sir, with whom were you speaking at the time you were being interviewed?

A I talked to about seven people. Dr. Robert Seligman was the first.

Q All right, let's identify, who was Dr. Seligman?

A Dr. Seligman was the Vice-President -- well, he was going to become the Vice-President of Research and Development. I think his title was Vice-President of Operations, during the interview.

Q All right. And what, if anything, did he say

with respect to health and cigarette smoking?

MR. MOLLON: Objection, your Honor; time frame.

Q Tell us what he said. Don't paraphrase.

MR. QUIGLEY: Excuse me, Mr. Finz. Objection.

MR. FINZ: I'm just paraphrasing.

THE COURT: Counsel?

(Conference at the bench, off the record.)

THE COURT: While portions of this testimony may relate to post-'69, at this point, we're talking about history. And the only history that we're interested in, at the moment, is pre-'69 history.

And I have directed that the questions relate to pre-'69.

And it only deals, as far as conversations, at least, with Philip Morris, and with no other defendant.

Does everybody hear me?

Okay.

Q Now, Dr. Farone, in the conversation that you had with Dr. Seligman, was there any conversation concerning the health hazards of cigarette smoking prior

to 1969, with Dr. Seligman?

A No time was identified. We talked about earlier history, that was before '76.

Q Was any time frame actually discussed?

A No, just that it was before the time of the discussion. We didn't discuss it by years.

Q Now, there were others that you had conversations with at Philip Morris, as well?

A That's true.

Q And who were they, sir?

A I had a discussion with Dr. Thomas Osdean.

Q And who was Dr. Thomas Osdean?

A He was the Director of Research, at that time.

Q And with respect to the discussion of health hazards, did you have any discussion of health hazards with respect to anything prior to 1969?

A Well, the discussions were all about the prior history of health hazards associated with smoking, but, again, it wasn't broken down by year, so I can't say.

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Q Did you draw any understanding from your conversation as to what period of time was being discussed?

MR. QUIGLEY: Objection, your Honor.

MR. FINZ: Is that an appropriate question, your Honor?

THE COURT: Overruled.

A Yes. I mean, it was earlier history that would go back in time to, you know, the '40s or the '50s, certainly, and maybe even earlier than that.

Q And that was the understanding that you had from these conversations?

A Yes.

Q Okay. Now, in addition to those --

THE COURT: Wait a minute. Maybe the witness doesn't understand.

I'm not, what I am limiting the conversation to is pre-'69.

If there was a general conversation that you know was related to last year, in the '70s, then, obviously, don't answer it.

If there is a conversation which is generic, and which goes back to a period of time before, which is including such a period of time, then you may indicate it.

And the jury will follow my instruction, right, about severing out post-69.

Are we okay, jurors?

MR. QUIGLEY: Your Honor, may we approach?

THE COURT: Yes.

(Conference at the bench, off the record.)

Q Now, sir, let's get to Dr. -- you say, Dr. Osdean. Was there any one, besides Dr. Osdean? That's two that you mentioned, that you spoke to?

A Yes.

Q And who was that, sir?

A Dr. Wakeham.

Q Dr. Wakeham. Dr. Wakeham's position, at that time, was what, sir?

A Vice-President of Research and Development.

Q And, in the discussions that you had concerning health and cigarette smoking, what period of time did you understand that that discussion was covering?

A With Dr. Wakeham, specifically, we got into discussions about the '60s. So, with Dr. Wakeham, specifically, I can certainly discuss things that happened in the 1960s. But, my understanding --

Q And what was the discussion with respect to the '60s, as it pertained to health hazards?

A It had to do with the times with which one could actually use animals to do testing on cigarette smoke condensate.

Q And what was the purpose of that, in your discussions with Dr. Wakeham at that time?

A Well, Dr. Wakeham was aware of my previous history with Lever Brothers. And he was interested in my experiences at Lever Brothers with animal testing, and discussed the experiences in a general way that Philip Morris had had with animal test results on cigarette smoke.

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Q And what, if anything, did Dr. Wakeham tell you concerning the relationship between cigarette smoking and any health hazard?
A I mean, we discussed, generally --
MR. QUIGLEY: Again, your Honor, time frame.
Did this discussion take place in '76?
THE COURT: Well, this is talking about '60s animal testing.
A -- that the carcinogenic potential of --
Q When you say, "carcinogenic potential," what do you mean by that?
A Well, the ability to cause cancer, as measured by animals, laboratory animals, that that had been demonstrated with cigarette smoke in the '50s. And that the tests had become more sophisticated in the '60s.
Q And these are things that Dr. Wakeham discussed

with you in this interview, is that correct?
A Yes.
Q And was there something about that interview -- what is it that Dr. Wakeham wanted you to do, in the event that you were going to be hired by Philip Morris, in connection with cigarette smoking and cancer?
A The purpose of those tests is to identify which chemical compounds in the smoke causes the tumors. And then, the objective of making the product safer is simply: To remove those chemical compounds from the smoke, so that they're not there to cause the reaction in the chemical test.
(Whereupon, Robin Bates relieves Eileen McLoughlin as the Official Court Reporter.)

Q. What is it that Doctor Wakeham told you was a concern that Philip Morris had in connection with cigarette smoking and cancer?
MR. MOLLON: Objection, Your Honor.
THE COURT: Sustained.
Q. What if anything did he tell you with respect to cigarette smoking?
MR. MOLLON: Objection, Your Honor. This conversation took place in '76.
MR. FINZ: I'll withdraw the question, Judge.
THE COURT: I am not interested with what their concerns were post Philip Morris' concerns. I'm not concerned with --
MR. FINZ: Right, post '69.
Q. Just to wind back the wheel, if I can.
THE COURT: Do you understand what's happening here? There is no claim against Philip Morris post '69. While he may be able to generate testimony which is relevant to the

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state of cigarette research in the 70's once he was hired then later he cannot talk about history which is not relevant to the purposes of this trial.

Is everybody with me?

THE JURY PANEL: Yes.

MR. FINZ: Okay.

Q. My last question on this conversation, did Doctor Wakeham tell you about the concern that Philip Morris had which went before 1969?

A. Yes.

Q. And what was that concern that he told you that went before 1969?

A. We discussed -- to my recollection we discussed specific chemicals that were identified in the fifties and sixties as being materials in smoke that were known carcinogens that should be removed.

Q. And these known carcinogens would produce what, sir?

A. Cancer.

Q. What type of cancer?

A. Depends on where they ended up affecting the cells. Could be lung cancer, specifically, but could end up other places in the body also.

Q. Thank you.

Sir, and you had other conversations with other executives of Philip Morris, other interviews, I should say, with other executives?

A. Yes.

Q. So this was not a casual interview of a hiring?

A. That's correct. Very formal.

Q. This covered how much of a period of time for the interview process itself?

A. Two days.

Q. It covered certain locations?

A. Both here in New York and in Richmond, Virginia.

Q. And following this process, what happened?

A. We agreed on terms and I was hired in the Spring of that year.

Q. When you were hired by Philip Morris, sir, were you hired as a scientist?

A. Yes.

Q. What was your title as a scientist with Philip Morris?

A. Associate Principal Scientist for one year.

Q. Sir, what was your specific role within that first year?

A. To advise the other scientists on their projects while I was learning all I could about the cigarette design.

Q. If I can stop you there for a moment.

While you were learning about cigarette design, you said something about the first year, and forgive a leading question but it's preparatory for the next one, you said the first year was going to be a learning process, is that correct?

A. Yes.

Q. As part of that learning process was it

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necessary for you to read articles or documents that were within the Philip Morris libraries or files?
A. Oh, yes.
Q. Could you tell us, please, how many documents it is you actually read? I mean, just give us a ballpark figure.
A. More than hundreds so it's probably thousands. It's not only documents generated by Philip Morris, but it's also the records of documents in their very extensive library of research that has been done by other companies and people around the world.
Q. What other companies, give us names?
A. R.J. Reynolds, Brown and Williamson, American Tobacco, Liggett Myers, Lorillard, Harvard Medical School, and American Health Foundation and many other people who had done research. University of North

Carolina. University of Kentucky. Just innumerable number of articles.
Q. As part of that process did you also read scientific articles that were out there?
A. Yes.
Q. Could you give us just a sampling of some of the authors of some of these scientific articles that you actually read?
A. Yes. I mean -- depends on what issue.
Q. Let's take, for example, epidemiology.
A. I don't recall --
Q. Does the name Doll and Hill --
A. Doll. There's a series of epidemiology articles that come from the fifties and forties.
Q. Did you read all of that as part of the learning process?
A. Yes. There are two parts of it. One is reading about it and the other is discussing it with people.
Q. Now, where did you find these articles in?
A. In the library.
Q. Where?
A. Philip Morris had an extensive library where these articles were kept.

Q. Did you read other articles such as mouse painting articles and things of that kind?
A. Yes.
Q. What articles were those, sir?
Do you recall names like Wynder and Graham?
MR. SHEFFLER: Leading.
A. Doctor Wynder has been publishing right up through the nineties so, yes, of course, I recall the names.
Q. Did you read those articles as well as many other articles?
A. Yes.
Q. And did you familiarize yourself as best you could as a scientist with all of the aspects of cigarette making or cigarette manufacturing?
A. Yes. Particularly as related to things that I knew because it was sort of a two way street. Having experience in aerosols I could actually talk with the scientists about how the different manufacturing things that you would do would affect the aerosols that would generate in the smoke itself.

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Q. What scientists did you talk to?
A. Well, there are about two hundred and fifty of them there and I probably talked to at least half

during that first year.
I actually collaborated with some of them on research on work that was published on nicotine.
Q. When you say you talked to scientists, were these casual talks or were these something by way of scientific discussions?
A. These weren't discussions that are family over coffee. These are discussions, why you do this research work, why did you do the experiment the particular way you did it, why did you analyze the result the way you did it.
Philip Morris had a program where once each week a different scientist would present the results of his research so frequently you'd go to those presentations, which were very formal, with slides and people sitting around a room. And then after we would go after coffee or have lunch and continue to talk about it and discuss the various kinds of research that was done.
Q. Now, sir, in addition to that kind of research did you do any other research out of the premises of Philip Morris itself?
A. Yes.
Q. Tell us about that.

A. I visited all the manufacturing plants.
Q. Excuse me?
A. I visited all of the manufacturing plants in the Richmond area.
THE COURT: Of?
THE WITNESS: Philip Morris.
Q. Yes, go ahead.
A. For example, there's a place called the sdemmery, s-d-e-m-m-e-r-y, and that's the place when tobacco leaf is brought in from the field they break it up into what they call stems, which isn't really stems at all. It's the mid-rib. It's the thick portion of the leaf. And the leaf, which is the space or material, it's between the ribs. So they end up with putting it into containers. They're big containers called hogs head, big wooden containers like big barrels, and they put the stems into one and they put what they call leaf or lamina into another.
And there are different kinds of tobacco. There's Burley, Bright Tobacco, and we learned the differences. We learned about how they're treated differently.
So I visited the cigarette manufacturing facilities where the tobacco that comes back from the

warehouses, where they store it is chopped up into long thin strands and then it's rolled into paper with an automatic machine. Learned about the different kinds of making machines. Learned about the capabilities. Some of them could attach filters on the end, most of them could. The kind of filters they can -- that could attach how the filters were made. Everything about making cigarettes.
Q. One of the job roles that you had was to

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fill yourself with as much information during that first year about tobacco and cigarette smoke, isn't that correct?

A. Yes.

Q. As a scientist did you do that?

A. I did.

Q. And at the conclusion of that process did you learn about cigarette smoke, manufacturing of cigarettes, and what a cigarette was?

A. I certainly did.

MR. FINZ: Could we take a short break at this time?

THE COURT: Yes, I think we're ready for a break. We're on a break.

(Whereupon, the jury excused and a brief recess was taken.)

* * *

THE COURT: Counsel, let's proceed.

MR. FINZ: Thank you, Judge.

Q. Doctor Farone, what is a cigarette, and perhaps we can help you by offering you one, and with the Judge's permission you may step down and show it to the jury. Before you do anything you have to get the Judge's permission.

A. What I'd like to do for you is to actually draw with a bigger --

Q. Would you like to use that as well? Sure, I will get it for you.

A. This is a filter.

MR. FINZ: Hold on for a second, Doctor, while I set this up.

A. What I am going to do is draw a picture of the cigarette on a larger scale so we can talk about it.

Most cigarettes today, ninety-eight times seven percent of them are filtered so there is a filter end. And with most cigarettes if you look very, very carefully and if you unfold, unfold this paper that wraps around the paper you'll find that there's little holes in the filter. Those are called dissolution

holes or sometimes the process of putting that area in there is called ventilation.

Q. You have to speak up a little, please.

A. This part, a head of the filter is called the rod, the tobacco rod. That's where the tobacco is. And in a typical cigarette there are many different kinds of tobacco. Some as they purchase it, and some of it they put back together from tobacco scratching. That's called reconstituted tobacco. But there's Burley Tobacco.

Q. What is Burley?

A. Burley Tobacco is also referred to as air-cured. That's grown in places like Maryland and places a little bit further north and after they pick the tobacco, a particular kind, they hang it up in the air to dry so it's called air-cured tobacco. Burley is a specific variety of tobacco.

Q. You want to put air-cured next to that so we know what it is?

A. Sure.

(Witness complied.)

Q. What is the purpose of hanging it up?

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A. To secure it.
Q. What does "curing" mean in tobacco?

A. Curing of tobacco turns the tobacco from a green leaf, not something which is a dry-cured leaf. It ages it. It changes its chemical and physical nature. The tobacco, when its on the plant is just like a green leaf on any other plant and after you pick it, it starts to turn dry or dark. It's air-curing is one way to cure it.

The other kind of tobacco is called Bright, and that's sometimes called flue-cured.

Q. What does that mean?

A. Well, with flue-curing you take the tobacco and you hang it up in like a hot house and you put hot air from actually a little furnace through that hot house to cure it by cooking it a little bit. You don't burn it but you cook it a little bit. That's flue-curing.

Q. How long does that process normally take?

A. Weeks. Days to weeks depending on how it's done.

Then there is another type which is called Oriental. Sometimes that's called Turkish because a lot of it used to come from Turkey. A lot of it now comes from Bulgaria and Albania. This is an imported tobacco which is treated a different way. The leafs on that

tobacco are smaller. It's a different variety of tobacco. The leafs are smaller. It doesn't have stems that you have to remove and that is secured by ferment. They have actually put it in compressed base and they let it sit with a little bit of mixture on it. And that's a fermented tobacco.

In addition to what they call Burley and tobacco there are other kinds. They usually fall into moist imported tobacco, air-cured. When you take the Burley and the Bright to the stem, and I'm going to draw a picture of a tobacco leaf here -- that's a tobacco leaf. That's the stem that's attached to the plant. There's veins or ribs that run through the leaf. After it's cured it's purchased at auction by the tobacco company. They bid on it and they buy it. They bring it to the sdemmery and when they reach the sdemmery they have machines that break the leaf apart and the spaces in between where these ribs are. That's what is usually called leaf or lamina.

Now, one of the things we are going to find out as we go along, this looks like a very simple product but this is really a very complicated product as you find out as we put the pieces of it together. And there are some things that are confusing. Like they

call this leaf but yet the whole thing is leaf but what they mean by leaf is only the spaces between what they call stems. These are called stems, even though it's not really the stems. It looks like stems. They put these in a separate container and the leaf or lamina is what they normally call Burley or Bright. These stems, along with small pieces that are too small to break up into the filler and what goes inside the rod is called the filler.

Q. When you speak of a rod, Doctor, by pointing

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to the cigarette itself, can you point out what the rod is?
A. The rod is the part of the cigarette that contains the tobacco.
Q. And that's what you call a tobacco rod?
A. Yes, and the stuff that's inside the rod is call the filler. That's the tobacco. So the filler is inside the rod and they will take the stems. Sometimes they'll add them as stems.
Most of the time currently the stems are ground up and they're made into a paper like product using some of the other pieces that are left over and that is called reconstituted leaf.
Q. Now, would you tell us what is a

reconstituted leaf?
A. That is a chunk of material. Looks a lot like brown wrapping paper that is actually pieces of tobacco that have been -- and stems that have been ground up and put together just like you make paper. They lay down a layer of the fibers that they get from grinding up the stems and they put on top of that a solution that contains little particles of tobacco that are from other places in the manufacturing process.
When they make reconstituted leaf there is an opportunity to add things and do things to the tobacco. So we have these types; we have stems, we have reconstituted life. There are other things they do to tobacco.
Q. Excuse me, Doctor, so we have an understanding, the lighting end is what I'm pointing to?
A. Yes.
Q. And the mouth end is what the filter is?
A. Yes. The other thing they do to tobacco is they have what they call expander tobacco.
Q. What is that, Doctor?
A. When you first break the tobacco up into the life, into the stems, this has been a dried leaf when it was green in the plant and it was quite large and then

it shrunk when you dried it either by air-cured or flue-cured. And if you take strands of that tobacco and you treat it with a chemical such as carbon dioxide or freon or something like that and then you heat it quickly --
Q. Let me stop you, what are those chemicals and what would they do?
A. They're used as an agent to help expand the tobacco. They're going to heat it up. They're going to be like putting air into a balloon and make it hot so the air expands, and they make the tobacco strand pieces go back to their original shape. So what that does, it makes more volume, gets bigger.
Q. When you say expanded, are you saying that as the tobacco is curing it is shrinking?
A. Yes.
Q. Then there is a process that is used to get it back into --
A. A larger --
Q. A larger shape?
A. Yes.
Q. There's a chemical that is used to do that, is that what you meant?

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A. Yes. So that's another type of tobacco that goes into the filler. In most modern manufacturing when they make these things they make them very, very rapidly. There made like six thousand a minute or eight thousand a minute. The machine works very, very rapidly and because of that there is a significant amount of rejects; that is, they all don't make good cigarettes.

Because tobacco is expensive the other thing they add back then is something called ripper shorts. That's a term that says when I have a cigarette that I'm not going to put in the pack itself, because it's defective in some way, they rip the paper off. It gets put back in the filler, that's only the inside of the paper, and they put that back into other cigarettes. They use it over again. Some of it goes to make this reconstituted leaf.

Now, after they put all of these pieces of tobacco together to put inside the rod then they also put on additives.

Q. Now, what is an additive, Doctor?

A. There are two general classes of additives. One are called casings and the other is called flavorants.

Q. Why are there additives put on?

A. The process of making tobacco by the machine

is for -- there's several reasons for putting the additives on. One of the processes for making cigarettes by the machine is in making it so fast it has a tendency, if the tobacco is dry, to turn it into dust. So part of it is to make the tobacco stay soft so they make it into the machine and do that rapidly. The casings are generally put on too. One of the reasons is to help the tobacco to say soft and pliable. And flavorants are added because those are things which impart some flavor into the mouth while the person is smoking the tobacco, the cigarette. And the general thing is that we have to realize also that cigarette tobacco is very expensive. It's many dollars per pound whereas these materials are expensive. So you reduce the cost of the cigarette by using a lot of casings, for example.

Now, the casings can be something on the order of twenty percent of the -- so eighty percent they have stuff, the filler, the tobacco, and then it was twenty percent approximately added to this on top of it to make sure the filler that goes into the rod --

Q. Let me stop you there. As I look at this cigarette and as we look at this cigarette I see something that looks like tobacco.

Are you saying that all of it is not a hundred percent tobacco, is that what you just said?

A. That's correct. There are a lot of other things other than tobacco. Sugar was added.

Q. Before we get into that, whatever is not tobacco, is that something that's added to that?

A. Yes.

Q. Alright. Go ahead, Doctor.

A. Now, what I'd like to do is burn the cigarette, so I'm going to burn the ones I got up here on the board so you can understand what happens when you

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do that.
The coal is the lit end of the cigarette and what happens, cigarette burns very, very high. It can get up to fifteen hundred degrees Fahrenheit. Actually temperature almost as high as two thousand degrees Fahrenheit.
Q. Is that considered pretty high in chemistry?
A. Yes, that's high.
Q. Could you give us some example?
A. The temperature gets up to ten times the boiling point of water. The boiling point of water is like 212 degrees Fahrenheit and you get up to 2000 degrees Fahrenheit. Gets very hot. And most people

think that's the air that causes burning.
There are two kind of processes that goes on. One of them is called combustion.
Q. Can you tell us what is combustion?
A. Combustion is --
Q. Are you running out of paper?
A. No. Combustion is the mixing of oxygen with the thing that you're burning to create a new set of chemical compounds. If you have perfect combustion of something like paper you only make two things. You make carbon dioxide and water carbon dioxide. That's in the air that we exhale.
Q. Excuse me, Doctor, let's assume I took this little piece of paper and I lit a match to it. What would come out of that?
A. Well, if you don't burn it perfectly it's like burning tobacco. You're going to end up with smoke coming out. Smoke is the air so you will end up with carbon dioxide. Water, all kinds of chemicals are made by the combustion process. If you burn that paper, predominantly what will happen is combustion. You're mixing it with oxygen from the air.
In the cigarette you have another process that goes on. The air can't go through that coal. That

coal is so high that it expels air so the air goes on the side of the coal, alongside of the coal. And then you have another process that occurs called pyrolysis.
Q. You have to stop there and take it very slowly and tell us what is pyrolysis?
A. Pyrolysis is the chemical change from one set of materials into another. Happens with heat in the absence of oxygen. There is no air, no oxygen there because the oxygen can't get there so it makes a different set of chemical compounds. You make one set with combustion and you make a different set with pyrolysis.
Q. Is that important in tobacco smoke?
A. Yes, it's very important because different ones of the chemicals that have been measured, and we are concerned with over the many years, are caused by the combustion process and certain ones are caused by the pyrolysis process.
Q. When you say different ones are caused by combustion we'll get to that in a minute but, generally speaking, what do you mean by that?
A. For example, we will be talking about classes of compound and one class of compound are not good. The bad guys are aldehydes. They're things like

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formaldehydes.
Q. We'll get to that in a moment.
What about pyrolysis?
A. Pyrolysis are some of the compounds that are related to like benzene. Those are the ones that are formed more like pyrolysis. That's another set of bad guys. The point is because we have these two processes going on here. We want to find out which process controls the development of which of the bad guys so we can attack the process --
Q. When you speak of bad guys, what do these bad guys do?
A. The bad guys are implicated in causing cancer, lung cancer.
Q. Lung cancer?
A. Yes.
Q. So when we talk about bad guys, these are the chemicals that cause lung cancer, correct?
A. Yes. Now, burning this we got those two processes going on and we're generating smoke. We have two different kinds. We got the kind that comes through -- we got the kind that comes through the cigarette. That's called main stream.
Q. Why is it called main stream?

A. Because it goes -- it's the main stream into the smoker.
Q. So when the smoker inhales, breathes in the smoke, that goes through the tobacco rod into his mouth, down his lungs, that's main stream tobacco?
A. Yes. The smoke generated due to combustion and pyrolysis. It starts -- it's vapor when it starts. We are talking about forming early on and as it moves down the rod it condenses and forms little droplets.
Q. Why does that happen?
A. When you cool something that's a vapor below it's boiling point turning into a liquid we have these little droplets.
Q. Why is it, Doctor, getting cooler at the point where you have a little droplet?
A. Well, this heat, this combustion that goes on, if you look at the head of the marker you're getting a wave from where the combustion is actually occurring in the pyrolysis.
Q. As you're getting closer to your mouth it's closing off?
A. This here is room temperature. This end is cooling and this end is extremely hot so as you get this hot material moving down the rod into the filter it

condenses in these little droplets. Not all of it condenses. So in main stream there's two parts. There is what some people have called the particulate phase. They're really not particles but they're liquid droplets, but it's called the particulate phase. They can have some particles inside the liquid droplets. It can be salt and certain kinds of inorganic, and then there is gas. Not all of that material that burns will turn into droplets.
Q. Doctor, with respect to the particulate phase of the main stream smoke, are there other names that are attached to that?

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A. Yes.
Q. Will you tell us what they are?
A. Tar is one name that you heard it called upon and sometimes it's referred to as DPM.
Q. What does that mean?
A. Total particulate matter. It's an acronym for tar or particulate matter. If you look at a typical cigarette these days there is about, I'm just going to pick a number, kind of an average in grams we're not use to but a very small measurement of .675 grams or 675 milligrams of tobacco filler in here.
Q. What does that mean to us lay people?

A. What it means is we got 675, let's say milligrams to start off with. If you look on a cigarette pack it's going to tell you that, how much tar the cigarette delivers. Let's say you look on that pack and you find out that according to some test they do when they burn this it delivers five milligrams of tar. Let's just pick a number, five. Well, one of the things you're interested in is what happened to the other 670. That's only five that's going in the main stream. You have 670 going someplace else. Some of it goes into ash. That's the ash that's left over.
Q. That's in the ash tray?
A. Yes, and the rest of it goes into what's called side stream.
Q. What is side stream, Doctor?
A. That's all the material that burned between the puffs and during the puffs that didn't go in the main stream and it's not left in the ash.
Q. Where does it go?
A. It goes into the room, into the atmosphere.
Q. What happens to the atmosphere?
A. The atmosphere, it breaks into two parts. As it's generated we have particulates there or the tar or the aerosol phase and then we have gas.

Q. What happens to that in the atmosphere for the smoker?
A. It stays in the room. If the room is extremely ventilated; that room is small, and there are other people in that room you're breathing and exposed to the particulate matter and gas phase and the phase that's in the mainstream. There are four different places that it's partitioned.
Q. Let me stop you right there.
Doctor, have you testified in other cases involving --
THE COURT: Are you finished with this diagram?
MR. FINZ: Not yet, Judge.
Q. Have you testified in other courts in connection with cigarette smoke and lung cancer?
A. Yes, I have.
Q. Sir, would you tell us, please, where have you testified and who has engaged you?
A. If I can remember them all -- for the State of Mississippi.
Q. On behalf of who?
A. Attorney General of the State of Mississippi.

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Q. Meaning on behalf of the People of the State of Mississippi?
A. Yes. Florida, Texas,
Q. When you say you testified in those states --
A. Well, I didn't testify in all. The only state case that I actually testified at a trial was Washington State. The other --
Q. Was that for the Attorney General or the People of the State of Washington?
A. Yes.
Q. Against whom?
MR. RANDLE: Objection. May we approach?
THE COURT: That's not relevant.
MR. RANDLES: And the first part of the question.
(Whereupon there was a side bar discussion held off the record.)
MR. FINZ: I'll stop it there.
Q. Now, sir, please continue with your chart.
A. The last point that I want to make is that if you look at what's coming out of the main stream being delivered to the smoker or what's going in the side stream, if you tried to figure out what about the

cigarette causes those things to change, it turns out that approximately sixty different things can change what happened. In addition to the composition of the tobacco, the kind of tobacco you put in, and in addition to the additives that you put on, we have the kind of filter, the kind of paper that's used because the paper can allow some of the stuff out or can allow some of the things in. The material that's in the filter, the length of the cigarette, the diameter of the cigarette, when you get through with all of that you will find this is a very, very complicated system where you can create many, many different forms of this aerosol that's called tobacco smoke.
Q. By changing all of these different things that's in cigarettes, Doctor, have you heard of the term puff volume?
A. Of course.
Q. What is puff volume and how does it relate to what you have on the board there?
A. When you take a puff on a cigarette you obtain a certain volume of gas with that puff and that volume is a very small -- it's measured in units called milliliters A liter is about a cup roughly and a milliliter is .03 quarts, like three hundredths of a

quart, very small amount of volume, and that can go, depending on the smoker, it can be less than thirty and go up to five or sixty milliliters. At fifty milliliters we will be at a twentieth of a quart which will be the volume of gas that you would inhale that would contain the particulate matter.
Q. Now, sir, you mentioned something before and I said I would get back to it and I am going to do it.
Now, you said that combustion and pyrolysis was important in connection with certain chemicals.
Now, would you tell us, please, are there any chemicals in cigarette smoke that -- before we get into that, how many chemicals are there in cigarette

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smoke?
A. Well, that's very difficult to answer. The number is probably close to 8000 of which probably 4800 or 5000 have been identified.
Q. Now, how do you identify chemicals in cigarette smoke?
A. There are many ways. The way that has been used and most often, you take this tar or the combination of tar and gas together. That's called whole smoke. If I put a very cold trap behind the cigarette then everything that comes out will condense,

will get cold. It will get so cold and that turns into liquid. Some will get ice if it gets cold enough. I can put it into a device called a chromatograph.
Q. Chromatograph?
A. Yes.
Q. What is that?
A. A chromatograph separates it so there are two kinds, gas and liquid, but they all work about the same way. If we have a very long tube for gas and I put the mixture of chemicals in one end of the tube, the tube has a coding or it has little beads inside of it called the packing and these materials separate.
As they go down the tube some of them move faster than others depending on the temperature of that tube, so the ones that move faster will come out the end first. The ones that move slower will come out later, and if you check as they come out the end you can actually separate all of these chemicals into individual chemicals. Once I have the individual chemicals coming out the end I can put it into a different type of machine. A spectrometer is one and another one is called infra-red.
Q. These are fancy terms.
A. There are many that have the ability to

identify the molecular structure of the chemical so once I separate them and I put that chemical into the machine I can determine what chemical it is.
Q. The basis question, Doctor, you had said 4800, sometimes maybe up to 8000.
Is there a way technologically that you can separate and identify each of the chemical components of cigarette smoke?
A. Yes, and you can measure how much is there.
Q. Is that important to measure it?
A. Yes.
Q. Why is it important?
A. I was talking earlier about any kind of exposure to products or anything. You need to know how much of the different chemicals are there because otherwise how do you know what the exposure is.
Q. Was there sufficient technology back in the -- prior to 1969, for example, to determine what chemicals there were in cigarette smoke?
A. Yes. The technology of course improves every year. By 1969 we had identified, I don't know the exact chronological, but I think at that time some probably two thousand chemicals that were in smoke. So they keep identifying more, but the major ones, the ones

that are there in larger quantity were identified

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historically first and those include a lot of the most potent carcinogens.

Q. When you speak of potent carcinogens, are these the bad guys you talked about?

A. Yes.

Q. Speaking of the bad guys, and they are lung cancer producing, that's what you mean by bad guys?

A. Cancer causing chemicals, yes.

Q. Let's go to combustion.

You want to start with pyrolysis?

A. It doesn't matter.

Q. Let's talk about pyrolysis.

Are there any cancer producing bad guys in pyrolysis?

A. Yes. Pyrolysis leads to the challenges generally associated with pyrolysis of polynuclear aromatic hydrocarbons.

Q. That's a pretty long term so let's spell it out on the board and I want to ask you to describe exactly what it is and how it is that we get that in cigarettes.

A. Sometimes referred to as PAH.

Q. Spell the whole thing out so we can get an

idea of what it is.

A. Polynuclear aromatic hydrocarbon.

Q. For what process do we get polynuclear aromatic hydrocarbons or PAH's?

A. Predominantly from the pyrolysis. I'll put the "P" there.

Q. Put the "P" there so it will be easier for us to follow. You're the scientist. We're learning.

A. (Witness complied.)

Q. Now, would you tell us, please, what are, and I'm not going to use the long term, I am going to use the abbreviation, what are PAH's in cigarette smoke?

A. PAH's are chemicals that are known to cause cancer.

Q. How long has it been know that PAH's cause cancer?

A. Late fifties, I believe. That's the time I became aware about it. I haven't really done a study to determine exactly when the first report is on it but certainly the late fifties.

Q. When you read the papers for that one year when you were employed by Philip Morris did you then familiarize yourself with PAH's during the period of time that you determined they existed?

A. I have been aware of PAH for a lot longer than reading those papers and I still read about them today. There are literally thousands of papers on PAH's alone so those papers go back to the time before I even went to Philip Morris.

Q. Do you have an opinion with a reasonable degree of scientific certainty as to whether or not, we'll take the company Philip Morris, knew of the existence of PAH's prior to 1966?

MR. QUIGLEY: Objection, Your Honor.

THE COURT: Lay a foundation.

MR. FINZ: Yes.

Q. Were you familiar with whether or not PAH's existed in cigarette smoke prior to 1966?

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A. Yes.
Q. And what was your knowledge of that, sir?
A. They were well known components in cigarette smoke.
Q. What was the basis of your knowledge, sir?
A. In 1965 through 1967, that's when I was at Virginia State College and we were looking at cigarette smoke, and we were well aware of the composition of the materials in that smoke might be injurious to the public health. I had a National Institute of Health grant so I

personally was involved in reading at that time and measuring things that were in the atmosphere that we are all exposed to.
Q. Did that include cigarette smoke?
A. That was one of the major concerns, cigarette smoke.
Q. So do you have an opinion with a reasonable degree of scientific certainty as to whether or not Philip Morris knew of the existence of PAH's prior to 1966?
A. On the basis of that and plus reading the literature at Philip Morris, yes.
Q. What was that opinion?
A. Yes, they knew. They were aware of it.
Q. Did you also read other articles and documents in connection with other companies in addition to Philip Morris prior to 1966?
A. I have read hundreds of documents from different companies that all acknowledge the existence of these chemicals prior to 1966.
Q. Would that include such companies as R.J. Reynolds and other companies?
A. Yes.
Q. You say that with a reasonable degree of

scientific certainty?
A. Yes.
Q. What is the -- is that hazardous or dangerous to one's health, the PAH's?
A. As a group of compounds they are hazardous to your health. There are a certain of them that work in smaller amounts then others. And one of the things we need to clarify is how hazardous they really are because you will see somebody talk about a nanogram.
Q. What is a nanogram?
A. There's grams. Milligrams is a thousandth of a gram. There's microgram which is a millionth of a gram. And there is nanogram which is a billionth of a gram, and somebody would like to make a point that these are a very small amount of stuff but for things like the polynuclear aromatic hydrocarbons a nanogram is over a billion molecules. It's over a trillion molecules. It's one followed by twelve zeros. So it's one of the things you have to watch out for, and understanding these chemicals we have to be able to measure them at very low levels because even though they sound like a very small amount it's a very large number of molecules, and we find that very few of those molecules are needed to in fact cause a physical change in a cell, for

example.
Q. For example, could you make a comparison

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with any of those molecules and any molecules in the ambient air to show the degree or the volume of what you're describing as a nanogram?

A. It's very difficult. In the air there is also a very large number of molecules, larger number of molecules than a nanogram, but what I am a saying is a nanogram is a significant number but things like that are in the air like water or oxygen, in those quantities a nanogram or milligram or even larger quantities do not cause the harm that carcinogens cause.

Q. Even in the small quantity?

A. Yes.

(Whereupon, Robin Bates was relieved by Michael Issacoff.)

Q Doctor Farone, would you give us an example, just a few of those chemicals that would fall within the classification of PAH's or polynuclear aromatic hydrocarbons, just give us a couple?

MR. SHEFFLER: Judge, before he does that, can we approach for one second?

(Whereupon, a discussion was had off the record.)

(Whereupon, the following takes place on the record in open court.)

Q Doctor, of course, my questions about any of the chemicals refer to chemicals that were identified prior to 1969; okay?

A Okay.

Q So, just give us a example of some of those chemicals that were identified prior to 1969?

A Well, they have long names but sometimes the acronyms are easier to remember.

Let me just give you one and you will understand why we probably don't want to give too many of them.

Benzo (A) Pyrene.

Q What is that?

A That's one of the polynuclear aromatic hydrocarbons, also known as BAP, because these chemicals have names that are so long that even chemists don't like to pronounce them.

So, one of the things they do they, play the acronym game. They take the first letter of each important word or syllable and call it by that.

So, that's BAP.

Q Is that cancer producing?

A Yes, it is.

Q Lung cancer producing?

A Yes, it is, and there are other pyrenes.

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There are things like Antracene.
Q Put it down, and that sign.
That was before 1969, right?
A Yeah.
Q And this was all known to be in tobacco smoke before 1969?
A Yes. Yes.
Q Go ahead, Doctor.
A There are additives of BAP that -- but I think that in order to get a time line of exactly when they were identified, I have to look at some of the documents.

Q That's not important for the moment. So long as we know.
What is the toxicities of something called BAP, in cigarette smoke?
MR. QUIGLEY: Objection, Your Honor. Foundation.
Q Doctor, do you have an opinion with a reasonable degree of scientific certainty as to what the toxicity is of Benzo (A) Pyrene with respect to cigarette smoke?
MR. QUIGLEY: Objection, Your Honor. Foundation.
Q Are you familiar with Benzo (A) Pyrene?
A Yes.
Q Have you studied that as a chemist and as a P.hD., and have you studied that in -- as a professional?
A Yes.
Q Did you study that with Philip Morris?
A Yes.
THE COURT: Before '69?
MR. FINZ: Before '69.
MR. QUIGLEY: I move to strike the last question and answer because he wasn't with

the company before '69.
Q Benzo (A) Pyrene changed?
THE COURT: We are only interested -- you don't need to strike the other question because that's -- that's foundation.
Let's go to the issue pre-'69, please.
MR. FINZ: Thank you.
Q Doctor, with respect to Benzo (A) Pyrene, what was the -- you have an opinion with a reasonable degree of scientific certainty as to whether or not, prior to 1969, BAP, Benzo (A) Pyrene was cancer producing -- lung cancer producing?
A Yes.
THE COURT: Was it known to be prior to '69?
Q Was it known to be cancer producing?
A It was known to be cancer producing, and yes.
Q Was it known by the tobacco industry, based upon your research?
MR. KACZYNSKI: Objection.

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MR. QUIGLEY: Objection.
MR. KACZYNSKI: Objection as to non- Philip Morris defendants, Your Honor.

Foundation.
THE COURT: I agree.
Sustained.
Before you ask that conclusion, you will lay a foundation as to the source of knowledge.

Q Okay.
Doctor, in your research, when you joined Philip Morris, and you did your research that one year, did you then read other papers that included other tobacco manufacturers, other than Philip Morris?

A Yes.

Q And did you familiarize yourself, as a scientist, with the knowledge that those papers imparted concerning other cigarette manufacturers?

A Yes.
Benzo (A) Pyrene was described in the general scientific literature as early as the 50's when I was reading the articles, as being a carcinogen.

Q And could you tell us, please, based upon the information that you received in your research, whether or not cigarette companies other than Philip

Morris --
MR. KACZYNSKI: Objection, Your Honor.
THE COURT: Sustained.
Counsel, please approach.
(Whereupon, the following takes place off the record, at the bench).
(Whereupon, the following takes place on the record, in open court.)
MR. FINZ: We will move on.

Q Doctor, in addition to the PAH's that you have just described, were there other cancer producing agents or carcinogens in cigarette smoke prior to 1969?

A There are -- yes.
There is a long list of chemicals that I have seen as having been identified and in the tobacco city documents, documents dating before 1969, as being listed as carcinogenic.

Q What are those, Doctor?

A The list is so extensive.

Q Give us some examples of them, please?

A Without the documentation it is very difficult to remember.
What I don't want to do is to mention one

that might not be on the list, from my recollection, whereas you can actually refer to the list and write them all down off the list.

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Q Well, rather than do that, let me do it another way.
Was there a specific form of chemical that was primarily developed within the combustion process itself, something called nitrosamines?
Have you heard of that?
MR. KACZYNSKI: Objection.
THE COURT: I really would prefer the witnesses to be on the witness stand, and I think that --
MR. SHEFFLER: Can we approach?
THE COURT: I think we have gone much too long in this session.
Q Doctor, what are nitrosamines.
A Nitrosamines are chemicals that are formed by interaction of oxides of nitrogen which are commonly found in automobile exhaust, and amines, which are amino acids, and they are chemicals commonly found in plants and people's bodies, and they form a combination called a nitrosamine, which is a very toxic chemical.

Q And sir, do you have an opinion with a reasonable degree of scientific certainty as to whether or not, prior to 1969, there was any relationship between nitrosamines and lung cancer?
MR. KACZYNSKI: Objection.
Foundation, Your Honor.
THE COURT: Mike read that back please?
(Whereupon, the Reporter read back the requested testimony.)
THE COURT: That was available in the scientific literature.
You may answer that, yes or no.
THE WITNESS: Yes.
Q So --
THE COURT: Now, lay a foundation.
MR. FINZ: I beg your pardon?
THE COURT: Lay a foundation.
Q What was that literature that you actually read, sir?
A The information from various scientific journals and studies performed by the national Institute of Occupational Health and Safety, and the national Institute of Health, but basically there were, maybe I could go back to -- in 1962, I took a

course in heterocyclic chemistry, and one of the teachers of that course was a fellow by named Doctor Frank Pop.
Doctor Pop was one of the pioneers in the development of cancer, chemotherapeutic agents.
Back in the early '60's we didn't have many chemicals that would attack cancer cells and Doctor Pop and his students, when I was in graduate school, were developing chemicals that you could use to treat cancer cells, and in the process of doing that, he studied and was interested in all chemicals that actually would go into a cell and cause cancer,

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that there was two parts to it because just like the cancer causing chemicals, the cancer chemotherapeutic chemicals also have to penetrate the cell to kill it.

The cancer causes cells penetrate the cell to cause a change in the cell structure, and Doctor Pop at Parkson University was very much interested in nitrosamines as a class of chemicals that can very easily penetrate the cell and cause a change in the cell, either, for the purpose of causing cancer, which he didn't want to do, or for killing the cancer cell.

Q And did you learn about nitrosamines?

A Yes, I did.

Q Would you tell us then what are nitrosamines?

A Nitrosamines are chemicals that can penetrate cells, and in fact, induce a change in his genetic information when that cell reproduces, which if uncontrolled is called cancer.

Q And Doctor, what is the relationship, if any, between nitrosamines and cigarette smoke?

A Cigarette smoke contains a high level of nitrosamines that come from various sources, some of which is in the tobacco associated with the tobacco alkaloids like things like nicotine and various alkaloids in tobacco.

Q What's an alkaloid?

A An alkaloid is a class of chemical compound that has a particular structure.

It's got a nitrogen and a ring and the alkaloids are plant substances or plant materials, most of which have fairly strong drug effects.

They are used as drugs.

Q Now, is there anything, any nitrosamine that is specifically related to tobacco?

A The nitrosamines that are called tobacco specific nitrosamines.

Q What does that mean, tobacco specific nitrosamines?

A They are found predominantly in tobacco and they are related to the chemical benefits of this nitrosamine is to grow.

That comes from the oxides of oxygen or nitrites with the alkaloids.

Q Now, how does it get into the tobacco itself, Doctor?

A The alkaloid, as the tobacco is cured --

Q You are using that alkaloid begin.

Can you break that down for us?

A Let's take nicotine as an example.

Nicotine is the key alkaloid, the one that's present in the largest amounts.

As the plant produces nicotine and as the leaf dies, let's call it that, either through curing or whatever process, that a certain amount of that nicotine will react with nitrites that were present

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in the tobacco, usually from fertilizer because they fertilize with nitrates, which turns into nitrite.
Q What's -- what's a nitrate?

A Nitrate is a chemical that's used in fertilizer to help plants grow.
Q Why is it used?
A To help plants grow.
You need to have nitrogen in order for the plants to make amino acid, plant material, in order for them to grow.
Q And what happens when you are using nitrates to make plants grow with respect to nitrosamines?
What is the ultimate process that develops?
A If you have excess nitrates left, they degrade, what we call nitrites, which is a different form and that reacts chemically with things like nicotine to form the, what we call tobacco specific nitrosamines.
Q And was this knowledge known by the tobacco industry before 1969?
A I can't put a time on that.
Q All right.
Now, would you tell us, sir, with respect to nitrosamines themselves, is there something that has been known about nitrosamines and its relationship to being a carcinogen?

A Yes.
I have stated that before, yes.
Q And that knowledge was known before 1969?
A Yes, it was.
Q Okay.
Now Doctor, in addition to nitrosamines, is there some other grouping of chemicals that are human carcinogens?
A There are many such groupings, yes.
Q Would you just name, give us the names of some?
A One of the groups of human carcinogens are the aldehydes.
Q Would you spell aldehyde for us, please?
A A-l-d-e-h-y-d-e-s, aldehydes.
Q And would you tell us, what is an aldehyde, h-l-d-e-y-y-d-e-s?
A A -l.
Q A-l?
A --d-e.
Q What is it?
A Let's take the simplest one that everybody has probably heard of, formaldehyde.
Q Okay.

A Formaldehyde is the simplest aldehyde, and if in the early days in biology labs they used to use that for pickling the frogs, for example, so

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that you could actually preserve things in it but its turned out to be extremely toxic and to be carcinogenic and the understanding of that developed in the'60's late 50s and early 60's.

So, it is no longer used in most laboratories. They now use just plain old alcohol for the same purpose.

Q Now Doctor, you indicated they were other groupings of carcinogens in cigarette smoke.

By the way, was that known to be present in cigarette smoke before 1969 aldehydes?

A Yes.

Q Okay.

And Doctor, were there any other groupings?

A The Antracenes, means an aldehyde, polynuclear aromatic hydrocarbons.

Q PAH's?

A Are the major ones.

There are --

Q These are the bad guys that are lung cancer producing?

A Bad guys, yes.

Q It was known before 1969?

A Correct.

Q Known before 1966?

A Yes.

Q Go ahead?

THE COURT: Go ahead, what?

MR. QUIGLEY: Objection, Your Honor, and move to strike that.

At least one category he couldn't put a time frame on.

THE COURT: What category was that?

MR. KACZYNSKI: Tobacco specific nitrosamines, Your Honor.

MR. SHEFFLER: When he asks a general question, was it known, could he ask what was it known?

What is he talking about? What's it known to be a carcinogenic, was it known?

THE COURT: We are trying to do that.

(Pause).

THE COURT: Let's get some answers, counsel.

Q Was it known, Doctor, that PAH's were

cancer producing prior to 1966?

A Yes.

Q And was it known that aldehydes were cancer producing prior to 1966?

A Yes.

Q And was it known that nitrosamines were cancer producing prior to 1966?

A Yes.

Q Now sir, were there any other groupings that you wish to mention, at this point, that were carcinogens?

A The -- there is another grouping that has

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to do with metals.
Q Metal?
A Heavy metals.
Q Will you tell us about that grouping, sir, and I want you to confine yourself to information before 1960 -- 1969?
A Well, it was known prior to 1969 that exposure to certain metals, like Cadmium and Chromium --
Q Keep your voice up.
A Cadmium and Chromium and other things of that type could result in cancer.

Q And what is Cadmium, what is Chromium?
A They are metals that are found in the surface of the earth.
They are found, like Chromium is found in metal that's used in steel and things of that sort.
It depends on the form of the Chromium and how it is able to get into your body as to whether it will cause a problem or not.
Q Now Doctor, were there other groupings that were cancer producing and known prior to 1966?
A I think that's the major groupings.
Q Were there gases, for example?
A There are gases. They are generally toxic.
Q And what gases, sir?
A Well, the gases, I mean, it is well known; carbon monoxide, hydrogen cyanide.
Q Let's stay with carbon monoxide for a moment.
How is carbon monoxide formed?
A Carbon monoxide is formed by incomplete combustion.
In other words, the material that you are burning doesn't burn completely so you end up with carbon monoxide.

Like in an automobile you end up emitting carbon monoxide out the tilapia because the engine doesn't completely burn the gasoline.
In a cigarette, you emit carbon monoxide out the back of cigarette because the cigarette isn't completely burnt.
Q And is carbon monoxide one of the bad guys?
A Car -- it's not a carcinogen.
It's a bad guy. It's a toxic.
MR. RANDLES: Objection, Your Honor, and move to strike.
Irrelevant to the --
THE COURT: If it's not cancer producing, why are we talking about it?
MR. FINZ: All right.
THE COURT: So, let's strike it.
Q What else -- what else is there in the gases.
You said, cyanide?
A Yes.
Q What is cyanide?

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MR. SHEFFLER: Objection.
THE COURT: Is that --
MR. FINZ: I will ask the next

question.
Q Is that cancer producing?
A No.
Q Okay.
Is that something that's good for you?
A No.
Q It is not good for you?
MR. KACZYNSKI: Objection.
Q Now Doctor, let me proceed further.
One of your roles at Philip Morris you indicated was you had two roles.
One was to diversify and the other was to do, what, sir?
A To develop a safer cigarette.
Q Okay.
And sir, in order to develop a safer cigarette, and we will get into what that is and we are not going to do it before lunch. We will do it after lunch.
In order to develop a safer cigarette, what, in any, is the importance of testing the product that you are actually dealing with?
A Absolutely essential because you can't determine --

Q Tell us something about that?
A You cannot determine whether you made something safer until you compare it directly with the article that you are making it safer from.
So, if you say that I have article "B", and that's causing a problem, and I want article "B" to be safer than article "A", then I need to test that to make sure that article "B" -- we talked earlier about the different animal tests that one could do.
If you are trying to reduce the carcinogenicity of "A", then you need to test that against "B" to prove that in fact "B" doesn't cause as much cancer as "A".
Q Now Doctor, as long as you were with the tobacco company, having done whatever research you did with respect to other companies, did you ever discover at any time whether or not any tobacco company ever tasted a whole cigarette?
MR. KACZYNSKI: Objection.
Foundation.
Q Did you ever find that out, sir, prior to 1969?
THE COURT: Is that an objection?
MR. KACZYNSKI: Yes, Your Honor, on

foundation.
THE COURT: I will allow a yes or no and then I will need a -- then I will need

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-- this is still preliminary.
Q Did you ever find that out, sir?
A Yes, I did.
Q Now sir, how did you find it out?
A Through review of the papers and literature and through asking questions of the people I work with, and I --
Q Was it your job to read all of those papers?
A Yes, it was.
Q Was it your job to find out if the tests had been performed?
A It was my job to find out everything there was to know about how cigarettes are made, how they are tested, how they are used.
Q Was it your job also to find out if there were any tests -- if there were any results, rather, from tests?
MR. RANDLES: Objection, Your Honor.
May we approach?
(Whereupon, a discussion was had off

the record.)
(Whereupon, the following takes place on the record in open court:)
Q Doctor, we are going to go into more specifics after lunch, but did you read specific documents from other tobacco companies in addition to Philip Morris, concerning testing prior to 1969?
Did you do, that?
A Yes.
Q And you read those documents?
A Yes.
Q Okay.
We'll go into those documents after lunch.
MR. FINZ: Your Honor, it's a little late.
THE COURT: What are you doing now?
MR. FINZ: I am just going to wind it up with one or two questions.
THE COURT: No.
Come on. Keep going.
MR. FINZ: You want me to keep going?
THE COURT: I Will tell you when to stop.
I'm really very good at it.

MR. FINZ: Yes, Your Honor.
Q Now sir, did you make a determination with respect to Philip Morris as to whether you were there as a scientific director?
Was that your -- what was your title?
A Director of applied research.
Q Okay.
This would fall within your supervision, testing?
A No.
MR. QUIGLEY: Objection, Your Honor.
Q Were you aware of the biological testing

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that was done on the whole cigarette?
A There wasn't any on the whole cigarette.
Q During the period of time that you were at --
MR. MOLLON: Objection, Your Honor. Can we find out the time frame of what he's talking about here?
It sounded like at the time he was working at Philip Morris.
THE COURT: Yeah.
MR. MOLLON: Then it should be stricken because --

THE COURT: Let me hear the question.
MR. FINZ: Right.
Q When you were at Philip Morris and you read all the documents in connection with Philip Morris that went back all the way to the 30's, and you brought them all the way up to the time you were actually employed in 1976; you recall that?
A Yes.
MR. QUIGLEY: Objection. Mischaracterizing the testimony.
THE COURT: I will allow it. Let's go.
Q Did you read any articles or did you come across any documents with respect to any biological testing that was done on a whole cigarette by Philip Morris?
A No, I did not.
MR. MOLLON: Objection. Prior to '69.
Q Prior to '69?
THE COURT: The answer is, no, I didn't.
All right. We are going to stop.
Remember, jurors that this, the series

of testimony that we are going to look at is, with all likelihood, to be company specific.
And so when you hear Philip Morris, there's nothing to do with anyone but Philip Morris.
When you here another company, there's nothing to do with anyone but that company.
Have a nice afternoon -- morning -- have a need lunch.
You are not leaving.
I will see you at two.
(Jury leaves courtroom.)
THE COURT: Counsel, from this point on, you will carefully comply with the rules of admissibility of evidence, carefully, bearing in mind what is on the table, what we have issues that are left in this case and carefully do it with relation to a particular company utilizing the available mechanisms of evidence in this state.

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(Luncheon recess.)
(Continued on next page.)

Dr. Farone - Plaintiff - Finz/Direct

A F T E R N O O N S E S S I O N.
COURT OFFICER: Jury entering.
(Jury enters courtroom.)
COURT CLERK: You may be seated.
MR. FINZ: Shall I proceed, Your Honor?
THE COURT: Yes.
MR. FINZ: Plaintiff moves 984, please, offers 984.

Q Doctor, I show you People's Exhibit 984 in evidence.

(Handing.)

Q That is an RJR document dated August 26 of 1968; correct, sir?

A That's correct.

Q Now, and the author is Eldon D. Nielson, biological research division, who's sending this memorandum to Doctor Murray Sinkus, director of research of RJR; correct, sir?

A That's correct.

Q Now, if you would be good enough to turn to page two?

MR. KACZYNSKI: I object to the foundation with this witnesses.
He's basically going to ask him to

Dr. Farone - Plaintiff - Direct/Finz

identify a piece of evidence.
There is no foundation that the witness knows anything about it.
(Whereupon, a discussion was had off the record.)
(Whereupon, the following takes place on the record in open court:)
THE COURT: Go ahead.

Q Doctor, have you seen this document before?

A Yes, I have.

Q Are you familiar with the document?

A Yes.

Q And is the document, does the document contain some scientific information, sir?

A Yes, it does.

Q And are you able to interpret that scientific information?

A Yes.

MR. KACZYNSKI: Objection.
Foundation, Your Honor.
THE COURT: Sustained.

Q Would you tell us, please, sir, what that document is?

MR. KACZYNSKI: Objection, Your Honor.

Dr. Farone - Plaintiff - Direct/Finz

Foundation.
THE COURT: Sustained.

Q Is this a document -- do you know, sir,

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whether or not this is a document that's kept in the regular course of the business of R.J. Reynolds?
Do you know that?
MR. KACZYNSKI: Foundation, Your Honor. Never was an Reynolds employee.
MR. FINZ: We will concede so concede it is a document kept in the regular course of business.
THE COURT: Obviously, he wouldn't have objected.
MR. FINZ: Well -- okay.
Q Sir, having read whatever documents you have with respect to R.J. Reynolds, are you aware as to whether or not there were any biological testing, any biological testing was being performed on mice?
MR. KACZYNSKI: Objection, Your Honor. Foundation with this witness.
THE COURT: Sustained.
MR. FINZ: Is it that I have the wrong witness for this?
I just want to determine that.

THE COURT: Counsel, do you want to make an inquiry of the Court?
MR. FINZ: Yes, Your Honor.
May I step up?
THE COURT: Well, I tell you what, before you step up, you speak to your associate who is there at the conference on Friday where we discussed this very thing.
MR. FINZ: Perhaps we should have a conference with The Court, Your Honor.
THE COURT: You are all invited into the conference room.
The jury is excused. Jury is excused.
I will stay here.
(Jury leaves courtroom.)
MR. QUIGLEY: Could the doctor be excused?
THE COURT: Yes.
MR. LONDON: As I understood your, what was discussed at last Friday's conference --
THE COURT: I noticed you didn't get that in all the orders that were created as of Friday.
MR. LONDON: I didn't think we resolved

anything.
I think, what Your Honor did was inquire as of the defendants whether they would be objecting, as they are doing for every document, internal document, despite the fact that they had stipulated previously that obtaining the documents from the internet was the authenticity issue and which were not permitted to do discovery in the case.
However, now what is happening, we have got our internet documents.

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THE COURT: Do you have an order which confirms -- see, they are very good at preparing orders.

Do you have an order which embodies that consent?

MR. LONDON: I it tabbed in my old order book.

THE COURT: And if not, you have to serve notices to admit on all of this, which is what I told you on Friday.

MR. HUBICKI: What is the objection?

THE COURT: The objection is to

authenticity of this document.

Why don't you ask that?

MS. STEVENS: The objection is foundation with this witness.

MR. HUBICKI: What does this have to do with this?

MR. KACZYNSKI: Can't lay a business record foundation.

We have on the witness stand a man who was employed for Philip Morris from '76 to '84.

He's being handed a document not from Philip Morris but from R.J. Reynolds, not from '76 to '84, but 1968, and he's ask to lay a foundation for that document and he can't.

MR. FINZ: He already testified he reviewed these documents in the ordinary course of business of Philip Morris.

THE COURT: Counsel, I cited you a case. I didn't give you the name but it's a Court of Appeals case, 5people very something.

If you want the cite, I'll give it to

you.

Please get -- Jane -- see if Jane is on the phone.

(Pause.)

MR. LONDON: Judge, it's, first of all --

THE COURT: The nature of the case, I will tell you, it deals with a police officer identifying drug records of a defendant, which may not be as far afield as you think.

And it prohibited, unless he was familiar with the records and the business records of that company.

MR. LONDON: Judge, that order is not in there.

MR. LONDON: It doesn't appear that the order embodying the internet rulings containing the documents --

THE COURT: They didn't want to prepare it, didn't.

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MR. LONDON: That order was prepared in, probably, I don't know the year, early in this litigation, and my quick review

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doesn't appear to be in the order book.

MR. QUIGLEY: That's not the issue.

MS. STEVENS: The authenticity of the document, we are not disputing the authenticity of the document.

We are disputing the hearsay nature.

THE COURT: I don't know what you are disputing.

This sounds like a business record.

MS. STEVENS: It's hearsay.

It's not a business record exception. The witness can not lay a foundation that's a normal -- it's kept in the normal process of business.

MR. HUBICKI: It's already ruled in evidence.

MR. LONDON: We have already been through all this and marked this thing admitted.

Don't you remember April?

THE COURT: Without the order, they are now coming into this Court and objecting on grounds which I thought were covered.

MR. LONDON: I don't know. I don't

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know what we can do.

That's what I thought we did through April.

THE COURT: Thought this was covered.

You do something about to deal with it.

MR. LONDON: I gave my comments to the order as directed.

I can't do any more.

I sat through all of April going through each of our documents, listening to the objections, having Your Honor rule on them.

984, those arguments were made, documented in --

MR. HUBICKI: We have already --

THE COURT: I don't have an order embodying that these are business records.

MR. LONDON: Your Honor ruled on it.

THE COURT: I don't have an order.

MR. LONDON: I'll give you the dates you ruled on it.

THE COURT: I don't have an order.

You can't appeal a non-order. You can't appeal a consent without an order.

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MR. FINZ: Your Honor, I move for the order now on the documents we intend to use.

THE COURT: Was there consent?

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There's no hearsay here.
We are going through all this on every one of these and I don't -- I've ruled there's no internal hearsay here.
MS. STEVENS: Your Honor, our concern is this witness's foundation.
THE COURT: There is no necessity for this foundation.
MR. HUBICKI: We have already read into the record documents that have been ruled into evidence to the jury.
There was no foundation laid for those.
This is just, you know, an obstruction.
THE COURT: There is no order.
MR. LONDON: Your Honor, I would ask that we make an order now, put an order on the record for the documents that Your Honor has ruled on and that we intend to use today.
The defendants have endeavored to prepare an order and I provided comments.

They provided comments back.
Through nobody's fault --
THE COURT: I don't know what their consent means, anymore.
MS. STEVENS: I can tell you that from the designation we received last night of Farone, there is at least five or six documents that were specifically excluded by Your Honor as well.
It's --
THE COURT: Those are different because they were internal problems.
It was not as to the authenticity as a business record but the effect or whether it was in fact a business record, but there were other documents that were business records.
This -- I don't know the nature of this document but I don't understand what authenticity means.
MS. STEVENS: I don't think we are objecting to the authenticity of this document.
THE COURT: That either it's a business record or is it not.

MS. STEVENS: There are two separate inquires.
Authenticity is one step and hearsay is a second step.
This is a hearsay out of court statement.
THE COURT: Now, I am directing you, because this is nonsense. I am directing you to subpoena the CEO's of every one of these companies, put them on the stand and see if they are business records or not, and

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then object.
This is nonsense.
(Pause.)
THE COURT: The name of the case, for the record, that I am referring to is People versus Kennedy, and I can't -- you will find it in the citation.
MR. MERRITT: 68, New York, 2d.
THE COURT: 68 New York, 2d., thank you.
MR. KACZYNSKI: My original objection that started this is not where we wound up.

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Can I rewind a little bit?
My original objection was that we have an R.J. Reynolds document created in 1968 being shown to a Philip- - former Philip Morris employee who never saw the documents during his regular course of business at Philip Morris, and when this document was created, was not even working for Philip Morris.
THE COURT: Let me rewind.
If it is in evidence according to a stipulation, or a ruling based on stipulation, then he can comment on the science therein, and the fact that it goes into notice --
MR. KACZYNSKI: Your Honor, that then is the response to my objection.
All this other stuff spun out of control but if that's it, I understand my objection is overruled.
THE COURT: I don't understand your objection and neither does the record understand your objection.
That's my problem.

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MR. KACZYNSKI: Okay.
Well --
THE COURT: Now, either you folks draft a stipulation now, give me an order which reflects it, or do something, a notice to admit or something which will get past all of this.
Now, go ahead.
(Pause.)
THE COURT: By the way, nothing I said deals with the inapplicability of certain documents because they contain other problems other than what is a pure business record, but I don't know whether this does or doesn't.
I don't know what the document is.
MR. MOLLON: As far as the objection, what's a business record or what is not, you have the summary that was prepared by Jones Day, that big book.
That contains all of our objections

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with all of Your Honor's rulings as we understand them.

THE COURT: Wait a minute.

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I'm looking at that.

I don't understand, at this point, what is meant by authenticity.

MR. MOLLON: There are two issues.

Authenticity, as we understood it, that is a document that is genuine and has come from the files of the company it purports to come from.

THE COURT: That has nothing to do with evidence and when you rule on evidence that doesn't mean anything.

MR. MOLLON: There are two aspects to it.

Before you can put anything into evidence it has to be real.

THE COURT: No.

Whether or not it came from the files or was lost or destroyed is not an issue.

Authenticity means that the -- that the company that its coming from agrees that this is part of their files, and that if it meets the other criteria, it becomes a business record subject to admissibility.

Now, there are other criteria once a

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business record rule exception is established.

A business record rule hearsay exception, and if there's any document that, although in a business file, may or may not be a business record as we understand it, but if I don't get past the business record, I have no trial here.

MR. RANDLES: Can I propose a stipulation that may get us past this?

THE COURT: I want to complete the record.

MR. RANDLES: I am sorry Your Honor.

THE COURT: I appreciate it.

There are documents that are in files of companies that are received from outsiders, and unless it goes to the issue of notice, those are not business records.

There are other documents that may be generated by a business but which are not part of a business's function. Those are not business records.

But I have -- and I've excluded some specifically during the course of this trial

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which fall into one or both of those categories.

I'm not concerned about that. I can't

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even get to those issues unless we get pass that these are in the files, that if all other exceptions are eliminated they are business records.

That's all I'm concerned with and let them prove what they have to prove.

For example, what is this document?

MS. STEVENS: Our objection to this, this is a monthly research report.

We do not have a authenticity objection and we agree, it's a business record.

Our objection is the foundation for this witness to comment on a document from 1968 from internal Reynolds files, something he knows nothing about.

THE COURT: But that doesn't prevent him from looking at the document and saying this is what it says.

MR. LONDON: That's right.

THE COURT: Once it's a business record.

MR. LONDON: That's right.

MS. STEVENS: The document can be read by anyone.

THE COURT: That's right, absolutely.

MS. STEVENS: Doesn't have the expertise to talk about the document.

THE COURT: I don't know what the document is, so I can't go forth with what you are saying.

MR. LONDON: That's exactly right.

This could be, this entire procedure could have been, we didn't need to have this.

THE COURT: Well --

MR. LONDON: He's an expert in the design of cigarettes.

THE COURT: You don't want my to say more.

MR. LONDON: He can talk about this document.

He's a expert in the design of cigarettes.

THE COURT: I don't have a document.

MR. KACZYNSKI: This record has nothing

to do with the design of cigarettes.

THE COURT: I would like to see the document.

MR. FINZ: Biologically testing, the smoke physiology.

MR. KACZYNSKI: Smoking and health document, Your Honor, which has nothing to do with the design of cigarettes.

MR. FINZ: Has to do with testing.

MS. STEVENS: Has to do with internal Reynolds procedures.

MR. FINZ: But they knew. They knew.

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MR. LONDON: He will read it.
(Pause.)
THE COURT: All right.
Tell me why this is not -- I don't understand it.
So, I assume that somebody with a scientific background might be able to help us understand it.
MR. KACZYNSKI: Which is why you have overruled my objection. I understand that.
My--
THE COURT: Hold on.

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I overruled the objection as to his commenting on it but I didn't overrule the business records objection which I'm not even sure where that issue is.
MR. KACZYNSKI: We are not contesting this is not a business record. This is a business record.
MR. FINZ: Withdrawing it?
MR. KACZYNSKI: Yeah.
That wasn't the basis of the objection, in the first place.
THE COURT: I need something better from you what the --
MR. KACZYNSKI: When I say objection, foundation, with this witnesses, what I intended to do, and as I first expressed to Your Honor earlier, is that we have someone who had nothing to do with this documents, nothing to do with this client, nothing to do with this period of time interpreting some other companies documents.
THE COURT: That's the only way that anyone ever does testimony on these kind of documents.

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That's the only way that we ever have -- we have this all time.
There's nothing where, for example, a medical doctor treating somebody, disappears, dies or retires.
We get the document. We have another person look at the document who has never seen this document before, and the document is, and he is testifying based on the document.
That's what you have here. There's nothing uncommon about that.
Now, I don't mind the objection but I want to make sure that it's not a business records objection.
MR. KACZYNSKI: My objection was not a business --
MR. FINZ: Foundation.
THE COURT: Let's see if we can get something.
Do I understand that once something

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comes off of the internet files, it is a business record, unless there is something intrinsically within the record that would, for example, received by the company instead of produced by the company, or unless it's a notice question, that's a different question.

MR. RANDLES: Your Honor I don't think we can or need to go that far.

Here is what I propose to get us past this.

First of all, as part of this process we set aside the subpoena issue.

THE COURT: I want to get past this.

This keeps --

MR. RANDLES: I would propose this.

Your rulings, which were embodied in this, and I understand there are some comments that Mr. London has to do, but the booklets of rulings that the Court has made pretrial, we would agree that your rulings pretrial, when you admitted an exhibit, disposed of this question, the business record question.

We are not stipulating to agreement with the ruling but we will agree that it disposed of the question and --

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THE COURT: With that -- in other words -- wait a minute.

None of these have had a business foundation set up.

MR. MOLLON: Right.

MR. RANDLES: We know --

THE COURT: But that was the basis of my rulings that unless there was something evident that brought it out outside of the normal business record rule, that these would be admitted because I heard all of these objections.

MR. RANDLES: Right. Right.

THE COURT: So that I understand your argument, that once it came off the web site, it was a business record or received as a --

MR. KACZYNSKI: But we are past that. He's right.

MR. RANDLES: We didn't stipulate to the business record part of that but what I'm saying is, for the purposes of trial, for purposes of moving this issue along, that I am willing, on behalf of my client,

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I am willing to say on behalf of my clients that your Honor ruled when you ruled the document admitted, disposed of that

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objection.
Now, I'm not saying that we necessarily agree, but it disposed of it and we should move along.
MR. LONDON: Of course, Your Honor's ruling --
MR. SHEFFLER: As long as we have --
MR. LONDON: I agree with you, Billy.
THE COURT: No. No. No.
My ruling was positive that most of these documents, unless it fell into another category, were in fact business records which was agreed upon.
Now, if that is not so, that's not so. Then he has to prove that in some fashion.
MR. KACZYNSKI: Not if we don't object, and what Billy is suggesting, we already made the argument back in -- back last month and you've already ruled.
THE COURT: Wait a minute. No. No. No.

MR. KACZYNSKI: We will abide by that.
THE COURT: Where I already ruled that was my basis of ruling, and if I'm wrong that I'm going to change my ruling and we are going to do this ab anicio.
MR. RANDLES: What I am proposing is the burden for bringing forward, and it is our -- document by document.
The objection, as I understand it by R.J. Reynolds, as of this document, we are not making a business record.
THE COURT: In other words, what you are saying is, if you want me to look at the business record rule exception again, that you will bring that forward to me specifically.
MR. MANSFIELD: We will do it on a case by case basis.
THE COURT: Otherwise. I will take it as a consent.
MR. KACZYNSKI: Have your --
MR. SHEFFLER: Judge, we can't --
MR. MANSFIELD: I had ask earlier --
MR. RANDLES: I had asked you not to

call it consent.
MR. MANSFIELD: I had asked you earlier to mark this as a Court Exhibit.
THE COURT: That's right.
MR. MANSFIELD: Simply to reserve the arguments that we made, the objections we made, and Your Honor's rulings.
THE COURT: Wait a minute.
I understand -- I'm not afraid of my rulings, I am afraid of the underpinning of the rulings, which was that these appeared to be a business record, unless it fell

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outside the business record rule for whatever reason.
MR. MANSFIELD: We understood.
MR. RANDLES: We are not taking issue with that ruling.
MR. MANSFIELD: We made those arguments.
MR. KACZYNSKI: We agreed with that assumption as well.
MR. QUIGLEY: We are not --
MR. MANSFIELD: If there is a document that comes up where we think we need the

Court to revisit the business record, 4518 --
THE COURT: Then let me know but let me know specifically.
When you say, foundation, that's what foundation means to me.
MR. KACZYNSKI: Okay.
MR. MANSFIELD: When we say foundation, we will do 45 --
MR. FINZ: What's going to happen as a consequence of this, there will be an objection to every document on some foundation basis, that's what's going to happen.
THE COURT: I can deal with that as long as I have -- at least a presumed business record subject to later exception.
MR. MANSFIELD: We understand that, Your Honor.
MR. LONDON: That's what we have had -- that's what the order was.
THE COURT: I wants to make sure about that so there is no -- look, you can object on that ground or anything else but I want

to make sure I am aware of what you are objecting to.
MR. MANSFIELD: Thank you, Your Honor.
MR. RANDLES: Thank you, Your Honor.
THE COURT: So, let me say it so I understand it.
That a document which was taken from the internet site and which was previously ruled on by me, where I have allowed it into evidence, it is presumed to be a business record unless that objection specifically under 4518 or business record is verbally said by one of the attorneys here that is affected by that document.
MR. FINZ: So, the burden falls upon them to come forward, and not upon us.
THE COURT: However, any other objection which is non-business record will be, of course, made, and it will then be your burden.
MR. FINZ: I understand that.

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MR. LONDON: Your Honor --
THE COURT: Wait a minute.
Had I said anything wrong?

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MR. SHEFFLER: No, you haven't, but there's one issue.
If the document is being offered for notice only, then of course, the business record exception is not --
THE COURT: Not applicable.
MR. SHEFFIELD: When a document is covered, co-counsel be instructed to say what its being offered for truth or for, notice.
MR. FINZ: I don't think I got to identity that, Your Honor.
MR. MANSFIELD: We are going to need a limiting instruction with respect to any --
THE COURT: I have done it in anywhere one of these notice ones --
MR. LONDON: With the notice ones, Your Honor, were identified.
THE COURT: I identified it, but you should identify it.
MR. SHEFFLER: Otherwise how do we know what the objection --
THE COURT: You are right.
MR. LONDON: There was one point made

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that, correct me if I am wrong.
THE COURT: Hold on. Hold on. Stop. Stop.
Does anyone disagree with my statement originally of that agreement of the parties?
MR. LONDON: One point of clarification.
MR. SHEFFLER: It was your ruling.
THE COURT: I understand but my ruling was based on that presumption.
MR. SHEFFLER: The only thing I would say, Your Honor, is that there are documents that purportedly, according to the plaintiff, came from my files, my client's --
THE COURT: And you don't have them?
MR. SHEFFLER: I have don't believe they did, and I made objections, and I cannot stipulate or can not consents --
THE COURT: Any such document where, bring that document to my attention before it is referred to here, and we will rule on that one.
Are we all on board on that?

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MR. LONDON: There's a point that you made concerning their reserving the right to object on a document by document if it is

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not a business record.
It is presumed a business record unless they object?
THE COURT: Unless they object.
MR. LONDON: Then you said, and correct me if I am wrong, that they can object on other grounds.
MR. KACZYNSKI: Relevance.
THE COURT: There are many other grounds.
MR. LONDON: There are a lots of other grounds and throughout the month of April we went through those grounds.
We argued hearsay, we argued relevance, and you --
THE COURT: I didn't see the documents themselves.
MS. STEVENS: On context. Or the context.
MR. LONDON: You may remember we started --

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THE COURT: Counsel --
MR. LONDON: You were shown documents and you asked me, you said to me --
THE COURT: Sometimes, and I changed my mind.
MR. LONDON: You said this is so irrelevant you are going to --
THE COURT: Bring the jury.
MR. LONDON: -- exclude it.
Those were your words to me.
THE COURT: Counsel, counsel --
MR. LONDON: You have given them a opportunity.
THE COURT: I changed my mind based upon context.
MR. LONDON: Okay.
THE COURT: So, that's the way we are going to continue with this.
(Pause.)
THE COURT: Thank you, give me two seconds.
(Recess.)
MS. STEVENS: Are we past the CEO?
THE COURT: Yes.

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MR. FINZ: We need a ruling on that objection, Your Honor, on the foundation objection.
THE COURT: No.
The foundation objection has been covered by the consent.
The other objection was overruled.
However, you will confine the witness to --
MR. FINZ: Notice.
THE COURT: -- translating the document without translating -- without offering

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opinion's based thereon, and I think that covers the objection.

MR. SHEFFLER: May I just point out --

THE COURT: Go ahead. Go ahead.

MR. SHEFFLER: Just for the record that it'S pursuant to the Court's ruling that the documents that are embodied in the pretrial rulings will be treated as business records for this trial pursuant to the Court's ruling.

We made a Court Exhibit Four, the pretrial order.

That's --

THE COURT: What does that mean?

MR. SHEFFLER: Judge --

THE COURT: Why is that different than what I said?

MR. LONDON: Or any other trials before Judge Kramer.

MR. SHEFFLER: It's not by consent.

MR. FINZ: Now they are backtracking on everything we just did.

MR. LONDON: The next trial in September, we will do this again.

MR. SHEFFLER: You made your rulings. We lived with your rulings.

THE COURT: But I didn't rule on the business record rule except as a presumption contained.

MR. RANDLES: We understand that.

THE COURT: And I made it for a whole host of reasons.

MR. MANSFIELD: We agree with --

THE COURT: Now, as to a business record.

MR. SHEFFLER: We understand the

Court's ruling and we will abide by the Court ruling, unless we point out otherwise.

MR. FINZ: So the jury isn't confused, can you give some limiting instruction?

THE COURT: No, I don't need to.

This is the legal basis.

MR. FINZ: At least as to what the ruling was.

THE COURT: Mr. Sheffler, I stand by my rulings.

MR. SHEFFLER: Absolutely.

I want to make that clear on the record because that's what the Court said and I think it's perfectly right.

MR. FINZ: Do we have a consent, Your Honor?

THE COURT: Yes there is a presumed consent unless specific -- wait a minute.

MR. FINZ: Can the jury --

THE COURT: There is a presumed consent as matters to my rulings, but not as to the

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underlying nature of a document as a business record, subject to every other exception unless specifically mentioned as a

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business record exception without limiting that to any other exception that might be relevant.

MR. FINZ: The last objection is now withdrawn.

MR. KACZYNSKI: It's overruled.

THE COURT: It's overruled because it was not based --

MR. FINZ: The jury never heard it was overruled, Your Honor, that's the whole point.

MS. STEVENS: May I make one request?

That these whole objections are premised on plaintiffs providing an internet copy, and we haven't seen it.

Can we see a copy before the exhibit is offered to the witness?

MR. FINZ: Of course. Of course.

It's in the file cabinets.

MS. STEVENS: Just hand it to us before you offer it.

(Handing.)

MS. STEVENS: Thank you.

(Jury enters courtroom.)

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THE COURT: Continue, counsel.

Q Coming back to my last question, sir --

MR. FINZ: I'm going to put 984 in the machine.

May we have it?

Okay.

Q Now sir, reading with me, you see that in front of you, sir?

A Yes, I do.

Q You also have it on your screen as well as on the large screen?

MR. FINZ: Can we make that a little more focused, Michael, please?

(Pause.)

MR. FINZ: That's good. All right.

Q Now, that's a RJR Reynolds document, confidential.

The date is August 26, 1968. The author is Elvin D. Nielson, biological research division.

To doctor Murray Senkus, director of research.

Coming down -- I am going to ask a question in just a moment.

Coming down to the bottom, see where that

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says, Roman numeral two, smoking rats?

What does that mean, scientifically? What is this saying, scientifically?

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A That is rats are being exposed to smoking.
Q And what is this purpose of that, scientifically?
A The study the effects of the smoke on the rats.
Q Now sir, reading further, the chronic exposure of rats to smoke is continuing.
The number of exposures was increased to two a day on July 16, 1968.
What is the scientific significance of that?
A They are just increasing the dosage or exposure rate of the rats to the smoke.
Q Three rats were lost after bleeding tissues were taken for histology.
What does that mean?
A Histology is the analysis of tissue by close examination.
Usually you cut it into sections, and the significance of this is that apparently three of the rats died from the test.
Q No gross pathology was noted.

What does that mean?
A That in the tissue samples that were studied, under the microscope, usually, that they did not notice any abnormalities in the tissue.
Q The histology of the tissues taken from the rat which had smoked Tempo, cigarettes via an endobrachial cannula has been completed with the results given on the following page.
What does that mean?
A Well, cannula is a tube, essentially, that is placed in the animal so you can apply, usually, the chemicals that you are testing.
Tracheal means in the throat, and they taken the tissues of that rat and they are going to analyze the result.
Q Now sir, reading on the top of page two and that portion that is encircled, on the issue of notice, sir, one, and these are the findings; am I correct, sir?
A Yes.
MR. KACZYNSKI: I only have one objection.
That circle and the arrow were not on the original.

MR. FINZ: That is correct Mr. Kaczynski, yes.
MR. KACZYNSKI: Yes.
MR. FINZ: That's the circle I made. That's quite correct.
MR. KACZYNSKI: Thank you.
THE COURT: Counsel, that should not be gone in evidence that's going to the jury.
MR. FINZ: In that case, I will put the other one in, Your Honor.
THE COURT: I don't care if you do it for illustration but the one that's going in

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evidence --
MR. FINZ: The one in evidence is clean.
This is only for illustration purposes. The one in evidence is clean.
Q Now, if we turn back to it?
(Pause.)
Q Now, returning back to the findings on page -- top of page two, it says, one, a diffuse marked emphysema throughout the lungs.
What does that mean, scientifically, Doctor Farone?

A It means that rather than located in one place in the lungs, that much of the tissue showed signs of change and inflammation.
Q Now, with respect to biological testing, is this what you describe as biological testing?
A Yes.
Q Okay.
So, what is the knowledge of biological testing, knowledge to R.J. Reynolds at least by August 26, of 1968, when this report was generated?
A Yes.
Q And was it also between July 16, through August 15 of 1968 which is the period within which this report is covered?
A Yes.
Q This period is covered, right?
A Yes.
Q So, was the knowledge of biological testing something that was within the knowledge of the RJR Reynolds company?
A Yes.
Q Now sir, have you examined documents going back as far as you could with respect to biological testing of RJR Reynolds?

A I have.
Q And sir, have you found any biological testing -- first of all -- withdrawn.
Is this test or is this report, does that concern biological testing of a whole cigarette?
A The cigarette mentioned here is Tempo.
Q Is that biological testing of a whole cigarette?
A Well, it's a cigarette.
Q Okay.
Now, other than what you see here, sir, did you find or have you found any biological testing of any other whole cigarette with respect to R.J. Reynolds prior to 1969?
A No, I have not.
Q Have you found anything, even after 1969, with respect to R. J. Reynolds?
A Yes, one document.
Q And which one is that?
A It's a document that was published in 1994.
MR. KACZYNSKI: Objection, Your Honor.

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MR. FINZ: All right.

Q With the exception of that document, sir, have you found any other document with respect to any biological testing of a whole cigarette by R.J. Reynolds?

A No, I have not.

Q Thank you.

Now, please tell the jury, what is a whole cigarette?

A Well, we mean the whole product.

It's the product as sold rather than testing the components.

You can test the bright tobacco, the burly tobacco, the different types of tobacco. That was done all the time.

The whole cigarette is the whole cigarette with all the additives, with the paper, the filter, with the holes in the paper, exactly the way you are going to sell it to the customer, the person that's going to use it.

That's the whole or finished product.

Q And what is the scientific importance of that with respect to safety, sir?

A When you have something as complex as a cigarette or a hair shampoo or anything that you are exposing people to, the different ingredients, as you use them differently, can interact with each

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other.

You can have things by themselves, may not be harmful but when you put them together, are harmful, or you can have things which cause you harm, two things separately but when you put them together they cause you more harm when you add them together.

So, it's absolutely imperative that the finished product exactly the way it's going to be used is what is tested in the test.

Q And do you have an opinion with a reasonable degree of scientific certainly as to whether or not, given the knowledge that was out there within the scientific community and known by the cigarette -- by R.J. Reynolds Tobacco Company as to whether or not there should have been biological testing of the whole cigarette?

MR. KACZYNSKI: Objection.

Foundation and competence.

THE COURT: Sustained as to form, only.

Q Do you have an opinion, sir, as to whether or not R.J. Reynolds should have had biological testing of the whole cigarette prior to 1969?

MR. KACZYNSKI: Same objection, Your

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Honor.

THE COURT: Sustained as to form.

Q Sir, I'm going to show you 701?

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(Handing.)
THE COURT: You better let me see that document.
MR. FINZ: You have 701?
MS. STEVENS: Yes.
THE COURT: There's something here I have noted.
I like to see what they are talking about.
(Whereupon, Michael D. Isaacoff, Senior Court Reporter, is relieved by Eileen McLoughlin, Senior Court Reporter.)

THE COURT: May I see the document, please?
(Handing to the Court.)

Q Dr. Farone, the title page, please, "Philip Morris Incorporated, Tobacco and Health - R and D Approach, Presentation to R and D Committee, by Dr. H. Wakeham, at Meeting Held in New York Office, on November 15, 1961."
Just to refresh our memory again, please, who was Dr. Wakeham?

A Dr. Wakeham, at the time I interviewed at Philip Morris, was the Vice-President of Research and Development; and, after I joined, he was promoted to Vice-President of Science and Technology.

THE COURT: Yeah, but he was something else at the date of this document.
Let's go on.

Q Now, turning to the next page, if you would, please, there is what looks to be a table of contents.
Do you see that, sir?

A Yes, I do.

Q All right. And just very, very quickly, I'm going to read it: "Tobacco and Health - R and D Approach: I) Chemistry of Cigarette Smoke." And then the page reference. "The Cancer Controversy." And then page

references. "Smoking," and so on and so forth. And then a summary.
Do you see that, sir?

A Yes, I do.

Q Okay. Let's go on to, they are not numbered, so it's the seventh page, but, perhaps, you can identify, as I put it into the machine.
Do you see that, sir?

A Yes.

Q I have some writing. I'm just going to cover that writing because it's my writing.
Do you see that?

A Yes, I do.

Q Okay. It says: "Evidence linking cancer and

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tobacco, based on two main points: One, statistial evidence that certain diseases are more prevalent among smokers than non-smokers." And then there are three diseases listed: "Lung cancer, bladder cancer --"

THE COURT: Counselor.

MR. FINZ: Okay, let me go as far as lung cancer, and just eliminate the other two.

Q Now, what does that mean, "Statistial evidence that certain diseases are more prevalent among smokers than non-smokers," and then just listing, "Lung cancer"?

What does that mean?

MR. MOLLON: Objection; foundation, and competence of this witness.

THE COURT: Sustained. This is pretty obvious to a lay person.

MR. FINZ: All right.

THE COURT: It doesn't need any comment.

MR. FINZ: All right, I'll proceed.

Q Reading further: "These associations suggest that smoking may be a causative factor." Then it says, "Physiological tests in which animals treated with smoke condensates --"

What's a smoke condensate?

A We talked earlier about putting a very cold trap behind the the cigarette to trap all of the mainstream smoke, all of the smoke that came out of the back of the cigarette. It would condense it, turn it into a liquid or an icy material. And that's a condensate.

Q So, all of this information was known in 1961, is that correct?

A That's correct.

Q And you said before then; correct?

A Yes.

Q Reading further: "Extracts or compounds

therefrom suffer from increased tumor frequency."

Scientifically speaking, what does that mean, sir?

A That is a method of determining the cancer-causing potential, the means by which cancer is caused and induced, through treating. And the measurement of the number of cancers or number of tumors that the animal gets, is one way to measure the effectiveness or the effect of a chemical compound or a mixture, in this case, of all of the elements, all of the compounds that are in smoke, on causing cancer.

Q Reading further: "Most tests involve skin painting or injections on special strains of mice. Smoke inhalation experiments have failed to produce lung cancer."

Do you see that, sir?

A Yes, I do.

Q And is there anything scientific that you wish to tell us about that, or does that read, more or less, by itself?

MR. MOLLON: Objection to form.

THE COURT: No, I'll allow it.

Q Anything scientific you wish to --

A I think it's important to understand that skin

painting, they're applying it on the skin. They're using mice. They could have used rats. They could have used

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guinea pigs. This is one type of test.
Q Now, sir, I'm going to go further, and ask you to go to about three pages beyond that.
Thus far, sir, have we seen anything in that report that indicates that biological testing was being done on the whole cigarette?
MR. QUIGLEY: Objection, your Honor.
Your Honor, the absence of something in a report does not prove anything.
And I would object every time Mr. Finz would ask those questions.
THE COURT: How about being specific and not as detailed? The specific objection to the way it's asked is sustained.
MR. QUIGLEY: Thank you, Judge.
THE COURT: But, without the speech, counselor.
Q Reading further, sir, it says: "Relative potency of carcinogens to the skin of mice, comparison of different systems of grading."
Do you see that, sir?
A Yes, I do.

Q Would you, please, explain to us, scientifically, what does that mean? And, please be as simple as you can for us.
A There are listed five columns on the table, and they are testing eight different chemicals. These are specific chemicals. They could have been mixtures of chemicals. They could be anything. These are specific chemicals of the type that I mentioned earlier.
The polycyclic or polynuclear aromatic hydrocarbons.
Q Which are those?
A Almost everything in this table is a polycyclic.
Q Just name them name a couple of them for us, please?
A First one on the list is 9:10 dimethylbenzoantracene.
Q Is that polycyclic?
A Yes, it is.
Q Just say it is.
A They are determining in this test the relative potency. In other words, which one of these chemicals are worse than others.
You will see scores, "percent tumors," the number of mice in the test that developed tumors. You

will see a latent period, which is the length of time it takes for the mice to develop tumors.
Now, there are many ways of looking at the relative carcinogenesis of these materials. For example, you could add those two together, or you could figure out some kind of index.
The next three columns have different kinds of index. The kind of index is not as important as the fact that, by looking at how quickly it occurs, and the percent that it occurs, one can get an idea, for example, that the third compound in the list, 3,4 benzopyrene, which has 89.5 percent tumors in the rat, is, on that index, worse than the one that is the second from the bottom, one, two, five, six, dibenzoantracene.
Q And what's the scientific significance of that?

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A That tells us relative risk. That tells us which things are worse than other things.
Q Now, sir, the next is -- you spoke about the latent period -- and now there is a column called, "Iball's Index."
Do you see that?
A Yes, I do.
Q Now, I am pointing to it. What is an Iball Index?

A I don't remember the exact score. There are a number of scoring scales. But, what they do, all of them, is they try to indicate by some combination of these different parameters which products are the most hazardous.
In this index, what I do recall is it weights the latent period very heavily. So that, compounds which take a long time, for example, if you look at the bottom of the list, 3, 4, benzophenanthrene, takes 387 days.
Q I just circled that?
A You see that has a score of 17, which is a lower score. According to Iball's Index, 151 at the top, the 9:10 dimethyl 1, 2, benzoantracene, would have the highest rating.
So, it would be one of the more dangerous chemicals on this list.
Q And, sir, if you look at the Blum's grading culture, what that is?
A The higher the number, the worse it is. It's a rating scale.
Q The last column, "Badger," what does that mean?
A It assigns ratings. As you can see, the pluses, according to the Badger Index, the plus 4, as you can see, is worse than the one at the bottom that only has a single

plus.
Q Now, Doctor, was the technology available at that time, in 1961, to have done a complete biological experiment, just as you've explained here, on the whole cigarette product itself?
A Yes. There is no problem in replacing these compounds in this test with the whole smoke condensate from cigarettes, and making the same kind of determination on the entire cigarette smoke, rather than on just one compound.
Q And was that done?
A No.
MR. QUIGLEY: Objection, your Honor. He's not competent.
THE COURT: How would you know if that is competent?
THE WITNESS: This is Philip Morris. I was there.
MR. QUIGLEY: In '61, he wasn't there.
THE COURT: You weren't there.
THE WITNESS: But, I looked back at all the data there. I looked at it. I talked it over with my superiors.
THE COURT: And that wasn't done while you

were there?
THE WITNESS: Excuse me, sir?
THE COURT: I will allow it.

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Objection overruled.
Q And your answer, sir, was?
A That was not done.
Q Okay, next. Let me go to the next page. The next page reads, "Partial List of Compounds in Cigarette Smoke Also Identified as Carcinogens."
We're still talking about 1961, is that correct, sir?
A That's correct.
Q All right, just pick out a few. I don't want to go into the whole thing. I want to move this process along as quickly as possible.
THE COURT: I thought you testified that chromium was not a carcinogen?
THE WITNESS: No, sir, I testified that I could not pin down the time exactly as to when it was determined to be a carcinogen.
THE COURT: Okay.
Q All right,sir, just pick out a few of them?
A Benzopyrene.
Q That's what you described before?

A Yes, as BAP, I put up on the board. And, if you notice, it has a plus four after that.
Q What does it mean?
A Again, it's a strong carcinogen. It's a very aggressive carcinogen.
THE COURT: How high do those ratings go?
THE WITNESS: I think plus four is the top of the scale.
Q If you look at the page before, would that help you to answer his Honor's question, on the Badger?
A Well, that's what I said on the top, plus four. And then it goes down to plus one1. You can have a dash, which means it doesn't have an effect.
Q All right, let's go to the next page, to move the process along.
The next page, "Cancer Promoting Agents in Cigarette Smoke."
Do you see that, sir?
A Yes, sir, I do.
Q And that goes back to the British Journal of Cancer, dated 1959, is that correct, sir?
A That is correct.
Q So, what does that mean, this citation there?
A It simply means that the information being

provided on this page is drawn from that article that was published in 1959.
THE COURT: That portion of this document comes in for notice only.
Q Now, with respect to the bottom of that page, "Some Promoting Agents --"
Do you see that, sir?
A Yes.
Q What is a promoting agent?
A It promotes cancer or the spread of tumors. It isn't necessarily found, at that point, to be a causative factor.
Q And just give us some of those promoting agents; not all of them. I just want to move this along?
A Well, phenols, and benzine, chloroacetophenom, those are some of the agents listed here.

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Q How does a phenol promote cancer?
A The phenol promotes the cancer or the tumor to spread.
Q How does benzine promote cancer?
A You have told me it talks about tumor promoting and tumor initiating effect. They are talking: Which is stronger? Benzine is a carcinogen, in and of itself. So, it has some tumor initiating effect. And then, according

to this article, it also has some tumor promoting effect.
Q Is it fair to say, sir, that the information contained herein is information that was reported in the British Medical Journal in 1959? Is that fair to say?
A No, not the British Medical Journal, the British Journal of Cancer.
Q I'm sorry, for give me, the British Journal of Cancer; is that fair to say, sir?
A Yes.
Q Thank you. Let's go to the next page, very quickly. The next page is entitled: "Phenols in Cigarette Smoke."
Is there anything significant, scientifically significant about that that you would like to explain, to make it easier for us to follow?
A Yes, that the top one, phenol itself, is present in the largest amount, at least, according to this table.
And phenol has been studied in the industry for a very long time, since the '50s.
Q What does phenol do, sir?
A Well, it's a promoter of cancer, it helps the cancer spread.
Q Let's go on about fives or six pages on, and the title is, "Reduction of Carcinogens In Smoke."

Do you see that, sir? Do you see that?
A Coming, coming. Yes.
Q Okay. "Reductions of Carcinogens in Smoke: To achieve this objective will require a major research effort, because: One, carcinogens are found in practically every class of compounds in smoke."
Is there anything scientific about that, sir, that you would like to discuss with us?
A Well, I discussed earlier, they can be broken down into classes, but you have to, in order to determine which ones you go after first, you have to determine which ones are the most dangerous, the ones that have the most effect.
Q Now, sir, reading further down, just to save some time, the second paragraph of Number 1, and I will circle that.
MR. QUIGLEY: Your Honor, I would object, on the completeness doctrine.
I think he should read the whole page.
MR. FINZ: Well, I thought I would save time. If you want to read the whole thing, it's perfectly all right.
Whatever you want to do, your Honor.
THE COURT: I certainly allow you to do it,

counselor.
Q Let's go down to: "The best we can hope for is to reduce a particularly bad class; ie., the polynuclear hydrocarbons, or phenols."

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Now what does that mean, sir?
A Well, polynuclear and polycyclic can get a little bit confusing, but it's not, or these are not meant to be the same thing. The phenols are substituted aromatic compounds. They are just saying you should pick one class of compound, and you reduce that one to see how big an effect that makes. And then you move on to the next class.
Q Now, it reads further: "Present technology does not permit selective filtration of particulate smoke. "
And then it reads: "Flavor substance and carcinogenic substance come from the same classes, in many instances."
What does that mean, sir?
A Two implications or meanings. One is flavor substances can produce carcinogens, especially when burned. And, also, that the natural tendency of tobacco to have its own flavor, also contains classes of compounds that can cause cancer.
Q Reading, lastly: "Pyrolysis products have

multiple precursors in tobacco."
What is the scientific meaning of that, sir?
A Well, we talked earlier about pyrolysis of combustion. And pyrolysis is a very complex process. So, if you are looking at where the benzine or benzo(a)pyrene is coming from, it's going to come from more than one place.
Q And this is knowledge that R.J. Reynolds had even prior to 1961, is that right, sir?
MR. KACZYNSKI: Objection, your Honor; foundation, if he's talking about R.J. Reynolds.
THE COURT: R.J. Reynolds? Isn't this Philip Morris.
MR. FINZ: I mean Philip Morris. I'm sorry, I misspoke. I misspoke.
THE COURT: By the way, let me remind you that a document which is a Philip Morris document only comes in, unless otherwise indicated, against that defendant, as I have indicated to you about all of these documents earlier.
Q And this is knowledge that Philip Morris had, sir, prior to 1961, is that correct, sir?
A Yes.

Q Now, reading the next page, and I'm only going to read just one line on that, to save some time.
THE COURT: Hold on, hold on.
Go back. I have a question from the jury.
Go back.
MR. FINZ: Do you want me to go back, Judge?
THE COURT: Yes. Where is number two?
"Present technology does not permit selective filtration pf particulate smoke."
Is that what you want to know?
A JUROR: Yes.
THE COURT: Okay, go ahead.
MR. FINZ: Was that the question, Judge?
THE COURT: Yes. I just asked it.
Doctor, what does that mean?
Q Let me circle that.

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THE WITNESS: Okay, selective filtration means that we are going to filter one thing, one chemical out of the smoke selectively. And it's very difficult, because it's inside those little particles.

So, in a particle, you got to pull one thing out of the particle. You can filter out

the entire particle, or you can keep it from happening.

But, to have a particle coming through the filter, and take out one thing from inside the particle, is a very difficult thing to do. You can't do it.

Q Let's go to the next page.

THE COURT: Is that changed today?

THE WITNESS: No, no, basically not.

Q The next page is entitled, "The Production of Polycyclic Hydrocarbons From Tobacco Versus Cigarette Paper."

What does that mean?

A They're analyzing here, as we said the paper burns, also, and then the tobacco burns, how much of these particular compounds come from the tobacco, and how much of it comes from the paper, when the paper burns.

Q Why is that important, scientifically?

A All parts of the product that generate smoke, where the smoke is going into the smoker, need to be studied to make sure that the materials coming from that are, also, safe enough to use.

And what they're doing here is trying to determine the relative amounts from the tobacco versus

from the paper.

Q Now, a number of compounds are listed, many of which you have already discussed. I'm not going to expend too much time with that.

Let me go to the conclusion, sir. The conclusion reads: "Tobacco is the main source of polynuclear hydrocarbons in cigarette smoke."

And, sir, would you tell us, just refresh us again, what polynuclear hydrocarbons are?

A Well, if you added aromatic in between those two, that's the PAHs again. It's the same substances that we were talking about before. And, again, the table is showing, if you are going to do that, you have to tackle the problem in the tobacco, because changing the paper isn't going to do very much because most of these compounds come from the tobacco.

Q And when it speaks of polynuclear hydrocarbons, sir, what type of products, what type of chemicals are they?

A They are like the benzo(a)pyrene. It's the pyrines that are listed in this table, like anthracene, the ones I put on the board earlier.

Q Which are -- what do they produce, what are they called?

A What do they produce? They produce lung cancer.

Q Now, I'm going to the next page. And let's move along very quickly on this one, sir, as well. It's entitled: "Polycyclic Hydrocarbons Come From Many Tobacco Constituents." And then there is some mathematical

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quantifier.
Would you describe what that is, please?
A That's micrograms per 100 grams burned at a particular temperature, they say 650 degrees Celsius.
Q And what does that mean, scientifically, and what is the purpose of it?
A What they're doing here is taking tobacco, weighing it, determining the amount that comes from a certain amount of weighed tobacco at a given temperature.
So, that is a temperature specific determination, 650 degrees Celsius, that's about 1000, it's about 1100, 1200 degrees Fahrenheit. And that is one of the temperatures that you would see in the coal of the cigarette.
Q And then, sir, it says: "Percent in Tobacco," and then there is a listing of chemicals.
Now, you mentioned some of these chemicals before. Are any of these chemicals cancer-producing?
A Yes, these are cancer-producing chemicals. And

they are breaking down the tobacco by its consituent chemicals.
Tobacco is a complex plant material, and it's made up of things like cellulase, lignin, pectin, and the things on the right hand side are like glucose, that could be in the sugar that is added. Tobacco could have its own glucose. And they identify by the breakdown of the tobacco, how much of these various carcinogens are coming from various parts of the tobacco.
Q Just so we understand completely now, all of the encircled items, which I have just encircled there, are these all chemicals within tobacco smoke themselves?
A These are chemicals found in tobacco smoke.
Q And these are all carcingogens; correct?
A Yes.
Q Cancer-producing; correct?
A That's correct.
Q Now, there is a conclusion, and the conclusion that is reached reads as follows: "Removal --" let me just make sure it's on the screen -- "Removal of any single precursor will not eliminate polycyclic hydrocarbons from smoke."
What is the scientific meaning of that, sir?
A The table tends, is trying to point out that,

since it comes from many different places in the tobacco, you have to do something more than simply remove that component of tobacco.
For example, let's look at the glucose column. You could remove glucose. If you extracted, if you took the tobacco, put it in water, you could soak out the glucose. If you did that, you would remove that amount that was only in that column, you wouldn't remove the amounts that were in the other columns. So, that wouldn't make a very big effect.
Whereas, if you removed the pectin, which is the middle, that's the third one over, you can see the numbers there are very much larger, you would remove a much larger amount of these materials.
So, you can't get it all in any one place. So, you have to look at where the most of it comes from, in order to determine how to reduce these cancer-causing materials.

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Q Let's read further, sir, going on to the next page. Now it says -- we're still in 1961, is that correct, sir?
A That's correct.
Q Now: "Some Possible Ways to Reduce Carcinogens in Tobacco Smoke."

Do you see that, sir?
A Yes, I do.
Q "One: Discover major precursors for --"
MR. QUIGLEY: Your Honor, excuse me, but the document that is on the screen has Mr. Finz's handwritten notes.
MR. FINZ: I'm going to cover them.
MR. QUIGLEY: You can't read them.
MR. FINZ: I'm going to cover them.
THE COURT: Yes. Somehow we don't want your comments in evidence.
MR. FINZ: Okay, I'm covering that. Okay? All right?
Thank you. Thank you for telling me that.
MR. QUIGLEY: Any time.
Q "Some Possible Ways to Reduce Carcinogens in Tobacco Smoke." All right?
Now, "Number One: Discover major precursors for carcinogens and/or cancer promoters."
Do you see that, sir?
A Yes, I do.
Q Was that done?
A To a large extent. They determined, not

totally, of course, but for many of the carcinogens, as we have seen, they determined what, where they came from, what they're precursors were.
Q That was a good thing, from a --
A Yes.
Q -- from a safety point of view?
A Definitely.
Q Okay, let's go to, "Number two: Discover mechanism or conditions by which carcinogens are produced and modified, and modify those conditions."
Do you read that, sir?
A Yes, sir.
Q First of all, was there a technology, at that time and even before that time, with respect to discovering the mechanism or conditions by which carcinogens are produced, and modify, so that those carcinogens could be modified.
Was there such technology available?
A There was technology available to discover the mechanisms. And then, once you discover the mechanisms, then you can try to modify those conditions.
Q Now, sir, was the technology used up until 1961?
A The technology to attempt to discover some of the mechanisms was applied, but the technology to modify

those conditions was not applied.
Q Was that a good thing, not to modify them?
A No.
Q Was that in keeping with good health standards?
MR. QUIGLEY: Objection, your Honor.
THE COURT: Sustained.

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Q Now, let's continue: "Three: Select experimental tobaccos which produce a minimum of carcinogens."

Was that done, to your knowledge, sir?

A No, it was not.

Q And do you have an opinion, with a reasonable degree of scientific certainty, as to whether or not that was in keeping with appropriate science at that time, not to select experimental tobaccos?

MR. QUIGLEY: Objection, your Honor.

Is he asking these questions as to 1961, whether it was done prior to that time, or after that time?

THE COURT: He's not talking about that.

You are talking about at that time or prior, right?

THE WITNESS: Exactly. That's what I understood the question was.

MR. FINZ: Thank you, Judge.

MR. QUIGLEY: Thank you.

A As of 1961, even though one company selected strains or try different types of tobacco in these tests to find out which ones reduced these carcinogenic potential by these scales and by these tests, it was not done.

We did not, the industry as far as I know from all of my studies, all of my readings, everything I have seen did not select and make cigarettes from tobaccos that were tested and selected to minimize the carcingogens.

Q The next one, sir says: "Add anti-carcinogens."

Was that done?

A Not as of 1961.

Q The next one says: "Discover differences in particulate fractions, which will permit separation of carcinogens in smoke."

First of all, would it have been, is it a good thing, scientifically and also from a safety standard, to discover differences in particulate fractions that will permit separation of carcinogens in smoke? Is that a good thing?

A Yes, it's a good thing. I mean --

Q Was it done, sir?

A Well, the discovery of the carcinogens was done, but, as of 1961, I do not know have any techniques for separation that were applied.

Q And, sir, what would the scientific value be of separating the carcingogens?

A Well, you could, for example, identify which ones were the greatest problem, through the testing we talked about. So, you could look to eliminate those.

You could, in fact, in certain instances, remove the carcinogens, and then put back the rest of the material that was not carcinogenic.

Q Now, sir, I'm going to ask that you turn the page. I just have to cover some of my writing, so that Mr. Quigley doesn't get upset at me again.

THE COURT: And me.

MR. QUIGLEY: I would never get upset at you.

THE COURT: This is not a course in writing.

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Q All right, now we have a summary. Do you see that, sir?
A Yes, I do.
Q Now, "Summary: Low irritation and low nicotine cigarettes for commercial exploitation will be developed in the course of our present R and D program during the next two to five years, with an expenditure of not more than 25 percent of the R and D budget during this period. A medically accepted low-carcinogen cigarette may be possible. Its development would require time."
Do you see that, sir?
A Yes, I do.
Q Was that done?
A It was not done.
Q "Its development would require money."
MR. QUIGLEY: Your Honor, can we, again, have a time frame? Are we talking about whether it was done before 1961, or after 1961?
MR. FINZ: Was it done before 1961? That's what I'm talking about.
MR. QUIGLEY: Okay.
THE COURT: Well, it's not that clear.
MR. FINZ: All right. I will make it clear, Judge.
THE COURT: And not clear, particularly in view of the recommendations for the future.
They would have been self-contradictory, based on the wording, to have it done prior to '61.

Q Now, sir, so there is no question about it at all, "Its development would require time"?
Was that done prior to 1961?
MR. QUIGLEY: Objection, your Honor. This document is very clear that this is talking -- what this is talking about. It's an improper question.
THE COURT: I agree. Sustained.
Q Was it done in 1962, if you know?
A Well, it says, "next two to five years." That takes us from 1962 to 1966.
It wasn't done in '62, '63, '64, '65 or '66.
Q Okay. Thank you, with that question.
Sir, I want you to look at Plaintiff's Exhibit 648 in evidence, please?
Q Now, this document, sir.
MR. KACZYNSKI: Judge, I object to the number shown on the screen in violation of your order.
THE COURT: Sustained. What was this number?
MR. KACZYNSKI: Your Honor, if the copy that Dr. Farone has looks like that, that should not go to the jury.

THE COURT: Let me see.
(Handing to the Court.)
THE COURT: No. There is a number on the side.
MR. KACZYNSKI: That's the base number, that's, okay.
THE COURT: And our number that we have put

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on it.
MR. QUIGLEY: Could we see the copy?
MR. MOLLON: Could we just see the copy?
(Handing to counsel.)
THE COURT: Didn't I just show it to you?
MR. MOLLON: No, your Honor, you didn't.
This is our client's document.
MR. FINZ: It's just different in form, but it's the same.
MR. QUIGLEY: Your Honor, did he just give the witness a different document?
We would like to see what the witness is seeing.
Thank you.
(Handing to counsel.)
MR. KACZYNSKI: And, your Honor, if 648 is offered, Reynolds has a hearsay objection to it,

because it does discuss R.J. Reynolds.
THE COURT: Let's deal with one thing at a time. I have noted it
(Conference at the bench, off the record.)
MR. QUIGLEY: Your Honor can make a ruling if it's the same or different.
THE COURT: Is that a different number?
Can I see both of them, please?
MR. FINZ: Show the Judge the two, please.
THE COURT: What's the date on that?
MR. LONDON: Judge, they're the exact same date.
THE COURT: 11/15/68.
MR. LONDON: 11/15/68.
(Handing to the Court.)
(Whereupon, Robin Bates relieves Eileen McLoughlin as the Official Court Reporter.)

MR. FINZ: Will you get this document, 1068, please.

Q. Sir, take a look at Plaintiff's 1068. I'm going to put this on the machine.
Can we get some light on this? Good.

MR. KACZYNSKI: Objection to the markings on the exhibit again, Your Honor.

THE COURT: We will make sure the one in evidence has no markings and if you have notes, take them off.

MR. FINZ: I don't have any notes. All I have *aee stars and brackets.

Q. Sir, reading 1068, the date is August 31, 1964 and it's written by an Alan Rodgman, Research Department, who's Alan Rodgman?

THE COURT: We've already heard that.
Let's go on.

Q. Nitrosamines in cigarette smoke, reading from the last paragraph. Nitrosamines have been shown to be carcinogenic for different organs in several

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species of animals. Nitrosamines are formed by the reaction of --

MR. QUIGLEY: I object. We used this document with Doctor Feingold and Your Honor

required a foundational question concerning the article, where this comes from.

MR. KACZYNSKI: Authoritativeness, etcetera?

THE COURT: Why is this coming in now?

MR. KACZYNSKI: Mr. Finz asked Doctor Feingold foundational questions before reading the text of the article.

THE COURT: Is this just a reiterating of some other document?

MR. KACZYNSKI: Appears to be.

THE COURT: Why are you doing this again?

MR. FINZ: Because I wasn't able to do it before with Doctor Feingold.

THE COURT: Why don't you lay a foundation?

MR. FINZ: I am laying it.

THE COURT: No, you're not, you're reading from a document that I didn't allow in evidence.

MR. FINZ: Judge, on the foundation --

THE COURT: Please approach.

(Whereupon there was a side bar discussion held off the record.)

Q. Doctor, looking at 1068, you see that?

A. Yes.

Q. First of all, we're now back to the carcinogenic chemical in cigarette smoke, correct?

A. Yes.

Q. Do you find this letter to be authoritative?

MR. KACZYNSKI: Objection.

THE COURT: No. Give that to me, counselor.

MR. FINZ: Here, Judge.

(Handing.)

THE COURT: There's quotes in part, an article by one Boyland and Gorrad and Roe and Mitchly entitled -- I can't even read it. You see what I'm referring to? Hello?

THE WITNESS: Yes.

THE COURT: This seems to be a report -- do you recognize these people?

THE WITNESS: I have seen the report, yes.

THE COURT: That's not what I am asking. Do you recognize these people as being authoritative?

THE WITNESS: Yes. Authority for

producing the paper, yes. Scientifically.

THE COURT: They're credentials?

THE WITNESS: Yes.

THE COURT: And it was reported in --

THE WITNESS: British Empire Cancer Campaign.

THE COURT: Which you find authoritative?

THE WITNESS: Yes.

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THE COURT: This goes to notice folks, only as to R.J.R. only.

Now you may continue.

Q. Reading further --

THE COURT: Does this agree with your statement that as of that day nitrosamines -- sorry, I am not a scientist -- have been known by those people who got this report and the general scientific community as being carcinogens?

THE WITNESS: Yes.

Q. I ask the same question, Plaintiffs' 30, please.

MR. SHEFFLER: Can we get an offer of how this document is going to be used for, notice or proof or whatever?

THE COURT: I'll charge at a prime time and place.

Go ahead.

MR. FINZ: Get it on the screen, please, Your Honor.

Q. Doctor, if we look -- asking the same question, is this notice to the American Tobacco Company with respect to nitrosamines in 19 -- in October of 1964?

MR. SHEFFLER: Judge, can we --

THE COURT: This is a letter addressed to somebody in the American Tobacco Company so this goes to whatever is contained therein. Only goes to notice to the American Tobacco Company during the time period in question. Why is it necessary? Do they have a product?

MR. SHEFFLER: Judge, no, we don't. Can we approach on this for a second?

THE COURT: Absolutely. Why is this coming in?

MR. LONDON: This is notice, Judge.

THE COURT: To who?

MR. LONDON: American Tobacco.

THE COURT: Why is that relevant?

(Whereupon there was a side bar discussion held off the record.)

THE COURT: I have to give you instructions now. This document is a letter by somebody in South Africa to the American Tobacco Company for which there is no claim that a brand of them was smoked. This is a little bit different than R.J.R. where there was a brand smoked, and Philip Morris where there was a brand smoked early in the sixties and Lorillard where -- I'm trying to remember the names -- where there was a brand smoked in the sixties.

The claims against the corporate successor of American Tobacco, Brown and Williamson is not based on the use of the product. There was no claim of use of a product. Is everybody okay here? This is a claim of, and we haven't really heard very much about this yet, there is a claim that a conspiracy was formed of which American

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Tobacco for whom this was addressed was part to intentionally not warn consumers and this goes to the notice issue to them involving the conspiracy claim which will be lawfully charged at the end of the case. But as each of these documents come in I need to send you in the right direction. I may not do it in as much detail the next time.

Go ahead.

MR. FINZ: Thank you.

Q. Doctor, looking at Plaintiffs' Exhibit 30 there is a letter to the director of the Agricultural Research American Tobacco Company from the chief of the Tobacco Research Institute.

You see that at the bottom? You see that, sir?

A. Yes, I do.

Q. Coming back to the first page, the third paragraph I'm reading he informed me that he has qualitatively identified nitrosamines in tobacco smoke beyond any doubt but makes no claims as to their carcinogenic action in tobacco smoke, paren, though the press report went much further, unquote.

THE COURT: What's the dates of this letter?

MR. FINZ: This is dated October 29th of 1964.

THE COURT: By the way, all claims against this company end with '69.

Q. Now, sir, is there anything scientifically that you would wish to interpret with respect to that statement that I just read?

A. Scientifically it just indicates that they had identified in South Africa and were summarizing their discovery, if you will, or their identification, and it goes on to talk about other things.

Q. Now, if I may have continue 62, please.

MS. STEVENS: Can we approach, Your Honor?

(Whereupon there was a side bar discussion held off the record.)

MS. STEVENS: It's mis-numbered. It's really 1064 and it doesn't have any BATES numbers on it, Your Honor.

THE COURT: Where is the Bates number?

MR. LONDON: Came straight off the computer. Printed off the computer.

MS. STEVENS: I've never seen a document come off the internet without a Bates number. And you have a BATES number on this one.

How about using this one instead?

MR. LONDON: That's fine.

COURT CLERK: Judge, is this 1062?

MR. FINZ: No, it's 1064.

THE COURT: Again, this document only goes to Mr. Rodgman's employer.

Q. Now, sir, this is dated February 12th of 1964.

You see that sir, upper right hand corner?

A. Yes, I do.

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Q. Called "Analysis of Cigarette Smoke Condensate", a summary of an eight year study. You see that?
A. Yes.
Q. Let me go to the next page. You see that, sir?
A. Yes.
Q. I underscored some areas. To date -- the top, polycyclic aromatic hydrocarbons.
That's what you called PAH?
A. That's one notation, yes.
Q. Excuse me?
A. That's one thing, polynuclear. Sometimes they leave out the aromatic but it's also the class of compounds.

Dr. Farone - Pltf. - Direct 2567

Q. These are carcinogenic substances?
A. Yes.
Q. To date forty-three polycyclic hydrocarbons have been identified in Winston smoke. Of these, fourteen were identified unequivocally.
What does that mean?
A. Means without any doubt whatsoever.
Q. These were as follows: Naphthalene, 1-methylnaphthalene, acenaphthylene, and etcetera. Fluorene, and others. And then I have underscored what you had described earlier and I'm going make a circle around it as benz(a)pyrene. (3,4-benzpyrene.)
What is that, sir?
A. That's a carcinogen that we talked about before. It's got two different names. Sometimes these compounds have four, five different names but it's the same molecular structure. It's a known carcinogen, known lung carcinogen.
Q. That is what you described as a BAP, is that correct?
A. Yes, that's another nickname for it, BAP.
Q. Let me proceed about two pages down.
You see phenols?
A. Yes.

Dr. Farone - Pltf. - Direct 2568

Q. The following phenols from tobacco have been characterized.
Now, once again, phenols are what, sir?
A. Phenols are tumorigenic promoters.
Q. What is the scientific significance of what I just remembered, and there are a number of phenols identified?
A. This points out that these different products -- in these products in this smoke they found these chemicals.
Q. All right.
Now, sir, I'm going to go down to Page 61. Would you be good enough to try following me on that. Go to page 61.
See that, sir?
A. Yes.
Q. Now, my copy is a rather poor copy but perhaps yours is better hopefully.
What is the title on the top? I just can't make it out.
A. Conclusions.
Q. That's conclusions. Thank you.

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From results of a study of the composition of cigarette smoke the following conclusions were

reached; one, cigarette smoke is a very complex material.

That's what you said earlier, correct, sir?

A. Yes, I did.

Q. Two, cigarette smoke from any tobacco type of tobacco blend contains carcinogenic components.

You see that, sir?

A. Yes, I do.

Q. And, once again, carcinogenic components mean what?

A. Those are the compounds that cause cancer.

Q. Reading from the next page, sir, on page 62. Do you see that, sir?

A. Yes.

Q. Under number four, tobacco contains compounds which have been demonstrated to be precursors of carcinogens in smoke.

See that, sir?

A. Yes.

Q. Is that what you were describing before us, the precursors?

A. Yes. When you enter the combustion or the pyrolysis system the chemistry that we talked about before the precursors in the chemical which is the

carcinogens.

Q. Let me go to five. Tobacco contains compounds which have been demonstrated to be precursors of the carcinogens or promoting agent in smoke. And then the following is listed: Pectin, cellulose and ligmin tobacco are precursors of the carcinogenic phenols in smoke.

MS. STEVENS: For the record, both the carcinogens are cocarcinogens.

MR. FINZ: I'm sorry, let me read that again so there is no question about that.

Q. Pectin, cellulose and ligman tobacco are precursors of the cocarcinogenic phenols in smoke.

See that, sir?

A. Yes.

Q. What does that mean scientifically?

A. The term cocarcinogenic is a little fancier than saying promoter but it means the same thing. It works to help the spread of the tumor. It promotes the cancer.

Q. Then number seven, none of the chemical data acquired in our studies or in studies conducted elsewhere is inconsistent with reported biological -- what does that mean reported biological?

A. Results of affects on living tissue.

Q. Pathological, what does that mean?

A. Causes, disease.

Q. Or statistical data indicting cigarette smoke as a health hazard, what is the scientific meaning of that paragraph, sir?

A. That the statistics. If you will, the cause and effect relationship is established.

Q. We'll look at the last page which is page 63. Not the last page but the last page of this

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document other than the footnote. And that is signed by Alan Rodgman.
Do you see that?
A. Yes.
Q. Alan Rodgman was with R.J. Reynolds correct, sir?
A. Correct.
Q. Once again the date of that was February 12th of 1964, correct, sir?
A. Correct.
MR. FINZ: 710, please.
MR. KACZYNSKI: Your Honor, I have 710 as open under your previous ruling.
MR. MOLLON: I have an objection to that as well.
THE COURT: You got the ability to get there --
MR. LONDON: Yes.
THE COURT: Go ahead.
MR. LONDON: With --
THE COURT: I don't want to hear argument; I want to hear proof.
COURT OFFICER: Want to see it?
THE COURT: No, I don't want to see it.
MR. FINZ: May I stay with the witness for these questions, Your Honor?
MR. MOLLON: Your Honor, may we approach for one minute?
MR. QUIGLEY: May we approach?
THE COURT: Yes.
(Whereupon there was a side bar discussion held off the record.)
MR. FINZ: May I continue, Your Honor, please?
THE COURT: Continue is a generic word. You may prove.
MR. FINZ: The date.
THE COURT: I am not interested in dates;

I am interested in the business records here. This is an open document.
Objection on all grounds?
MR. KACZYNSKI: Yes.
THE COURT: Go ahead.
Q. I'll show you this document, sir, 710. Have you seen this document before?
(Handing.)
A. Yes, I have.
Q. And where did you see it?
Is this one of the documents you reviewed when you were working for Philip Morris?
THE COURT: Counsel, counsel, don't lead the witness.
Q. Where did you see it? Where did you see it?
A. I don't remember seeing the entire document.
Q. Did you see portions of that document?
MR. QUIGLEY: Your Honor, I object to any -- I think the witness --
THE COURT: Counsel, didn't I hear your objection?
MR. QUIGLEY: Your Honor, they're based on new grounds.

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THE COURT: Fine, I'll take the new

grounds. I haven't heard anything yet and you're objecting. Go right ahead. Have a good time. I want to make sure your voice is heard.
Counsel.
MR. FINZ: There is an open question, Your Honor.
A. Yes, I can recall one page of this document specifically.
Q. Is that a document kept in the regular course of business of Philip Morris?
MR. MOLLON: Objection, Your Honor.
MR. QUIGLEY: Objection.
MR. MOLLON: There is an objection since he's never seen the document. He only saw one page of it.
THE COURT: When did you see it?
THE WITNESS: While I worked there.
THE COURT: Where did you see it?
THE WITNESS: In the files,
THE COURT: What files?
THE WITNESS: The files of Philip Morris.
Q. Was that a record kept in the regular course of business, to your knowledge?

MR. QUIGLEY: Objection, Your Honor.
The witness is not competent to answer that.
THE COURT: Overruled.
A. They kept copies of the document like that.
Q. Was it in the regular course of business to keep such records?
MR. QUIGLEY: Objection, Your Honor.
THE COURT: Overruled.
A. Yes. Everything that was kept in notebooks or books that people wrote in was kept as part of a regular research and development in our facility.
Q. Is that a Philip Morris record?
MR. QUIGLEY: Objection, Your Honor.
THE COURT: I'll allow it.
A. I can identify at least one page of this document.
Q. Can you identify --
THE COURT: You said that twice.
What page of the document can you identify?
THE WITNESS: It's got a six in the right hand corner, upper right hand corner.

THE COURT: Can we see -- let me see it.
Can I see you all up here again? I'm missing something here.
(Whereupon there was a side bar discussion held off the record.)
THE COURT: You haven't seen pages one through five?
THE WITNESS: I do not recall.
Q. Sir, are they Philip Morris documents?
THE COURT: What about page seven?
THE WITNESS: Yes, I've seen that.

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THE COURT: So six and seven you have seen?
THE WITNESS: Yes, I have.
THE COURT: Continue.
I suppose you folks want some voir dire on this.
MR. QUIGLEY: Yes.
MR. MOLLON: Yes.
THE COURT: Before you go through -- after you establish what you think is a business record please give them a chance to do voir dire.
MR. FINZ: Of course.

Q. What I'd like you to do is just read page one to yourself, please. To yourself.
THE COURT: We are area not up to page one. Maybe I'm missing something, counsel.
MR. FINZ: I am too, Judge, so I apologize for it.
THE COURT: I heard him say he has seen documents which are on page seven and page six of this record. He has never seen pages one through five and you're supposing they are all part of the same record which I am not for the purposes of identification and business record analysis.
Q. With respect to pages six and seven which you say you have seen, would you be good enough to indicate whether or not -- what is the scientific --
MR. QUIGLEY: Objection, Your Honor.
THE COURT: Sustained.
Q. What are pages six and seven?
A. Pages six and seven describe --
THE COURT: Not what's on them.
MR. QUIGLEY: Objection, Your Honor.
THE COURT: Do not indicate what is on there.

THE COURT: You have not laid the foundation as yet counsel. I don't know what you're doing.
Q. Is six and seven a paper that is kept or a record that is kept in the regular course of business of Philip Morris?
A. Yes.
Q. Did you see this while you were employed at Philip Morris?
A. Yes, I did.
Q. Was it the business of Philip Morris to keep such papers as pages six and seven?
A. Yes.
MR. QUIGLEY: Objection, Your Honor. We request a voir dire before counsel goes any further with this document.
THE COURT: He hasn't laid the foundation yet. Once he lays a foundation I said I will give it to you.
Q. And was it the business of Philip Morris to keep such record within their files?
MR. QUIGLEY: Objection.
THE COURT: Overruled.
A. Yes.
Q. Did you see these papers in the files of

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Philip Morris?
A. Yes, I studied these and I remember them because they were pertinent to my own research.
Q. And you're satisfied that these are Philip Morris papers, correct?
A. At least with regard to pages six and seven.
MR. QUIGLEY: Objection.
THE COURT: You haven't laid the foundation, counsel. Counsel, that's all I'm saying, you have not laid the foundation.
MR. FINZ: Give me a moment. Let me think about it, Judge.
Q. Let me start again.
A business such as Philip Morris keeps records and they kept records in the years 1950 and 1960, '70, '80 up until this --
MR. KACZYNSKI: Objection.
MR. QUIGLEY: Objection, leading
THE COURT: I'll allow it.
Q. And it was the regular course of the business of Philip Morris to keep records, is that correct?
A. That's correct.
Q. Is that something contained on page six and

page seven, one of the type of records that would be kept in the ordinary and regular course of business of Philip Morris?
A. Yes, it was.
Q. Was this page six and seven a record that was kept in the regulars course of business of Philip Morris?
A. Yes, it was.
Q. Did you find these records within the records of Philip Morris when you were employed there in the capacity that you described?
A. Yes.
Q. Was this a record that was in the Philip Morris files?
A. Yes.
Q. And did you satisfy yourself just now that these are Philip Morris records?
A. Yes, I did. I specifically recall these pages because they were relevant to the work I was doing.
MR. FINZ: Have I left something out? I don't know if I left something out, Judge, but if I did I apologize.
THE COURT: Counsel, I really do not

appreciate your making extraneous comments to the jury, such as the one you just made.
MR. FINZ: I made it to my associate, Your Honor, not to the jury.
THE COURT: How come I heard it and every member of the jury heard it?
MR. FINZ: Well, I don't know.
THE COURT: Counsel, here, you may look up 4518 of the CPLR.
Q. First of all, was it made in the regular course of business?
THE COURT: We heard that three times,

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yes.
Q. Was it in the regular course of business to make it?
THE COURT: Three times we heard that and the answer is yes.
We want to make sure this is interesting to all of you.
MR. FINZ: And to me, Judge.
Q. Was Philip Morris in a business, sir?
A. Yes.
MR. FINZ: I don't know where else to go, Your Honor.

I move its introduction, Your Honor.
MR. QUIGLEY: Objection. Foundation.
THE COURT: Sustained.
MR. FINZ: May we approach, Your Honor, please?
THE COURT: Of course.
(Whereupon there was a side bar discussion held off the record.)
Q. Is this a writing, sir?
A. Yes.
Q. Is it the writing of an act, or a transaction, or an event?
A. Document is an event, yes.
MR. FINZ: Was it made within a reasonable time, is that what you're asking for, Judge, reasonable time?
THE COURT: Go ahead.
MR. FINZ: Oh, gee.
Q. Sir, was the entry made within a reasonable time of its contents?
MR. QUIGLEY: Objection, Your Honor. Reasonable time of what?
THE COURT: Of its -- of the business act.

MR. FINZ: Of the act itself.
A. Yes.
THE COURT: Now I have a question.
Can you tell me what is the basis of your knowledge of that? See, I understand the other two but you tell me what is the basis of your being informed of the timeliness of that document, of its creation after the act which forms the basis of what is reported?
THE WITNESS: Because one of the jobs or one of the functions that we were to carry out was, and this is in 1977, okay, when I had the job of trying to remove nitrosamines from tobacco which had not yet been done yet. There was still timely as of that time.
THE COURT: Then I don't think you understood the question, sir.
You know the date of this document?
THE WITNESS: No.
THE COURT: What is this? We have a date of 1/1/63 which seems to be somebody's thought. It's dated without admitting the truth of it.
MR. QUIGLEY: I don't know where the

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1/1/63 comes in.
THE COURT: It's on the report that I have.
MR. QUIGLEY: That's Plaintiff's handwriting.
THE COURT: It's also the typed date. You're not helping, not admitting the truth thereof.
I'm asking you how is it, how is it, to your knowledge, after '76 when you were there.
THE WITNESS: '76 through '84.
THE COURT: '76, how you had determined the time of this writing as opposed to the time of the act upon which it is -- upon the act of which a record is being made?
THE WITNESS: Because we had a major project. On page seven it talks about removing nitrates.
THE COURT: Ten years later?
THE WITNESS: Yes, but it was going on for a period of time.
THE COURT: How do you know that the person who wrote this wrote it at the time he did the research on this, that's what I'm

asking you, at or about that time? How do you know that? How could you possibly have known it?
THE WITNESS: Because -- timeliness in terms of when he did it as opposed to when it was still useful?
THE COURT: No, not whether it was useful in research. At all I am asking you is how you in 1976 can make a determination of the timeliness of the writing as opposed to the act of about which it's being written.
THE WITNESS: I'm not sure I understand timeliness.
THE COURT: Then that's the problem. That's why I'm having problems understanding an answer which was too readily given. How can you determine when the person who wrote all of this did the research and did that writing?
THE WITNESS: I interpret the timeliness to its applicability.
THE COURT: This is a legal question, not a scientific question. I'm asking how can you do that?
THE WITNESS: I can't do that.

THE COURT: Sustained.

Q. Doctor, is there a way -- was there a way in 1950, 1955, 1960, 1965, throughout that period of time to make a cigarette safer?

A. Yes.

Q. Would you please tell us, sir, how could a cigarette be made safer so that the incident of lung cancer and emphysema would be produced?

MR. QUIGLEY: Object to the form.
THE COURT: I'll allow that.

Q. Tell the jury, please.

THE COURT: I'm not allowing any other diseases so I want to focus on those two.

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A. The incidence and growth of lung cancer parallel the development of the modern cigarette and what we mean by that is that a cigarette made in larger quantities starting in the --

MR. KACZYNSKI: Objection, Your Honor. That's non-responsive to the question.

THE COURT: I'll allow it. It seems to be preliminary.

A. I am trying to explain how you know that you can make a cigarette safer in the sixties using technology that's available even in the 1920's and 30's

and 1940's and '50's, and the reason you know is because cigarettes were made in such a way in the early 1900's where there was no high incidents of lung cancer. The lung cancer didn't become a problem until around the late 1910 period, 1919, 1920's and in the 1930's. So we have here a disease, lung cancer, that's associated with a product very closely determined to be cause and effect, 1964. And yet in 1919, 1920, very low incidence.

Lung cancer was extremely rare in 1919 so all you have to do is ask yourself how are cigarettes made in 1919 or 1910. What was different about the cigarettes in 1910, 1919 compared to by 1964 where the Surgeon General tells us they now cause cancer. And the difference was we didn't use all the additives. We didn't cut it up very finely. We didn't do a lot of the things in terms of making -- recycling the particles of the tobacco, to do all of those things that we could do to make the modern cigarette. So one way to make the cigarette less carcinogenic in the 1960's is to return to the way that it used to be made in 1915 or 1910. It means taking a step backwards in technology but sometimes that makes an improvement in the product.

In addition to that, in the 1950's a

cigarette was made.

Q. 19 what?

A. 1950's a cigarette was made and marketed called Sano cigarette, and there was a King Sano cigarette and those cigarettes were extracted. The nicotine was removed. And if you read a lot of the literature from before 1960 you will see that a lot of these cancer causing chemicals, not all of them, but a lot of them like the nitrosamines, can be removed by extraction.

Q. How do you do that? Can you use water to just -- or some kind of solvent to just extract the material from the tobacco?

If it's so easy to do, to remove nitrosamines, why wasn't it not done?

A. We're discussing the ways of doing it. That was a simple means of removing the nitrosamines so they wouldn't be there when the material -- when the cigarette was smoked.

Q. Assume that the nitrosamines had been removed in the process in which you described. First of all, was that a difficult process?

A. It was done commercially in the early 1950's.

Q. Assume that the nitrosamines were removed,

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how would that affect the hazardous, the nature of the products or the cancer producing nature of the products?
A. It would greatly reduce it.
Q. Were the nitrosamines ever removed, sir?
A. They're removed to a large extent in one product that I am aware.
Q. Which product?
A. Product called "Next."
Q. Were they ever removed in a product called "Salem"?
A. Not to my knowledge.
Q. Were they ever removed in a product called "Parliament"?
A. Not to my knowledge. No evidence of that.
Q. Were they ever removed in a product called "Kent"?
A. Not to my knowledge, no evidence.
Q. What other case can one make a cigarette safer for the consumer?
MR. QUIGLEY: Judge, time frame, Your Honor.
MR. FINZ: We're talking about in the fifties.

THE COURT: Prior to '69.
MR. FINZ: Prior to '69.
THE COURT: Then you may ask separately thereafter.
A. Prior to 1969 we have seen from these documents and others, and my testimony before, that we know how to test the products. We know how to determine what is safer, and we know that we can select tobacco types. We can go in the field and pick different kinds of tobacco. There are many different kinds and we can test those as has been indicated in some of these documents. And we test those and find out the tobacco that cause the least amount of cancer in the mice and rats, in the various test animals, and those are the tobacco that we use in the products.
Q. How do you actually get to plant or get to grow these products?
A. It's like any other agricultural. They are grown from seed and they grow up into little plants and little plants are placed in the field and you can hybridize. You can breed them. You can select them for strains or variety that gets continually better in your testing.
Q. Are there any other ways in which a

cigarette -- was that technology known, that planting technology known in the fifties?
A. Yeah. The selection of plants or their increase, whatever you want, was known for hundreds of years.
Q. Now, sir, was there another way that you could make a cigarette safer prior to 1969?
A. I think we studied about four different ways of doing that. We could also make a cigarette substitute, if you will, to make the material behave like a cigarette in every way simply by starting another way or starting with all the chemicals that you know are in cigarettes that don't cause a problem, and you start to build up a product. I think I've seen it referred to

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as a surrogate cigarette but it starts off with the mildest form of tobacco that you will know, and then what you do is you add on only chemicals which you have tested as being safer. So you're building it up from something you know is safe to a more complex material without adding things that you believe will cause cancer, that cause disease.

Q. Sir, was there a way that aldehyde themselves could be removed to make cigarettes safer prior to 1969 or reduced?

A. Well, reduction is always possible and prior to 1969 one could have used or studied or looked for aldehyde select filters like carbon filters. I would have reduced the aldehyde filters more.

Q. How did those aldehyde filters operate? How did they work?

A. Filters have been available since probably the late forties or late fifties. It's a question of what you use, what material you use in the filter and what that material removes so the idea of adding a different kind of filter that removes different things is simply a matter of experimentation. You add different things to the filter and you will find out what kind of chemicals it removes. The filter alone will make a difference. The filter in combination with some of these other changes would make a bigger difference.

Q. Sir, was that technology about filters that you just described known prior to 1969?

A. Yes, carbon filters were known, yes.

Q. Give us some time period when were they known.

A. I believe late fifties, early sixties.

Q. Do you know the about the use of -- by the

way, were there other -- strike that.

Do you know whether or not carbon filters were used in other countries?

A. Carbon filters were used in this country and carbon filters are used in other countries.

Q. What countries were they used?

A. Round the world. Japan maybe uses the most of them but carbon filters are a very common kind of filter.

Q. Were they found to be useful in reducing the dangers and hazards of cigarette smoke?

MR. KACZYNSKI: Objection. Foundation.

Q. With a reasonable degree of scientific certainty.

THE COURT: One moment, please. Lay a foundation that he's aware of the dangers.

Q. Were you aware of the use of charcoal filters throughout the world?

THE COURT: For cigarettes.

A. Yes.

Q. And what was the nature of that awareness? How did you develop that awareness?

A. The objective of the charcoal filter is to remove the dangerous components from smoke. That's why

they were developed and used.

Q. Were you familiar with the charcoal filter?

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A. Yes.
Q. How did you develop the knowledge of the use of the charcoal filter?
A. The industry started using charcoal filter as I came became a aware of it, I believe, the early sixties.
Q. Now, sir, were there any other ways of reducing the hazards of cigarette smoking?
A. Before 1969?
Q. Yes, before 1969?
A. I think we covered the major ways that were available before 1969.
You said something about --
THE COURT: I don't want to review. One is use the tobacco mixture available in the early part of the century.
THE WITNESS: Use it the way they made it. They didn't put any additives.
THE COURT: Two was -- two was develop a hybridize or best -- the best healthful significant and hybridize it.
THE WITNESS: These are the least

carcinogenic potential.
THE COURT: Using a better filtering system including the charcoal filter?
THE WITNESS: Yes, and the fourth way was extracting nitrosamines.
MR. FINZ: And reducing aldehydes.
Q. Now, sir, prior to 1969 was any of that done to any of the cigarettes?
A. One of them was.
Q. Which was what?
A. The King Sano. There was a significant --
Q. With the exception of King Sano was anything done to the Salem cigarette?
THE COURT: We've gone over that already.
Q. Okay. With respect to any cigarette on the market?
A. Only one I'm aware.
Q. Prior to 1969 the only one was Sano?
A. Correct.
Q. Could you tell us, sir, what was the feasibility? What does feasibility mean, by the way?
A. It's your ability to be able to do it whether or not you can do it.
Q. What was the feasibility of doing to

making the cigarette safer prior to 1969?
A. Virtually certain you could do all of the things I said. Feasibility is a hundred percent.
Q. Sir, do you know a scientist, one who has researched all of the papers as to why those things to reduce the health hazards, why were they not done.
MR. SHEFFLER: I object to that, Your Honor. He testified at least three of them were done.
MR. FINZ: Said only one was done.
Sano cigarette.
MR. SHEFFLER: He testified about charcoal cigarette being used in the U.S.
THE COURT: Are you making a speech?
The question should be do you know why

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they were not done in the entire industries product.
MR. SHEFFLER: Limitation to who, Your Honor?
THE COURT: By the defendants.
THE WITNESS: No, I don't know why they were not done.
THE COURT: Don't know why they were not done? He doesn't know why they were not done to the entire products.

THE WITNESS: I do not know why they were not done.

Q. But they could have been done?
A. They could have been done.
Q. Do you have a opinion as to whether or not they should have been done?
A. I do.
Q. What is that opinion?
MS. STEVENS: Objection, Your Honor.
THE COURT: I'll allow that.
A. Yes, they should have been done I think they should still be done.
Q. Why should they have been done?
THE COURT: Counsel, I think that's obvious. You're ready to break for the evening?
MR. FINZ: I am, Judge.
THE COURT: Have a nice evening, folks. I want a minute to see you folks for a moment.
MR. FINZ: 9:45.
(Whereupon, the jury was hereby excused.)
THE COURT: Do I have your consent on juror number one or not on the record?

MR. KACZYNSKI: We consent if all defendants consent.
THE COURT: Are you sure you're not going to wake up two minutes later?
MR. LONDON: Judge, defendants did not consent last week to excusing.
THE COURT: This week they do.
MR. LONDON: This week.
THE COURT: I don't believe they didn't consent last week.
MR. QUIGLEY: I think that question is about juror number one right now.
MR. LONDON: You will have your opportunity to cross-examine and help us.
MR. QUIGLEY: But the point is they didn't consent. We don't see why we can't come back.
THE COURT: Counsel, there is no problem. I'll give you a day off but I will make that day up tonight. I'll make it up. I'll make it up and I will tell the jury I'm making it up.
MR. LONDON: Judge, the comment you made you're not going to tell the jury it's

us?
THE COURT: No, I am not but that don't mean I won't hint.

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MR. LONDON: Judge --
THE COURT: Counsel, on the record, I think this is wrong. I got seven alternates in this case so that jurors who had problems, which I anticipated reality, would be excused by consent but I think that you are being an obstructionist by not consenting.
MR. FINZ: Judge, before we leave --
THE COURT: Now, this will apply to whatever juror who is in the same situation.
MR. FINZ: Under those circumstances can we have ten seconds?
THE COURT: Tomorrow morning. You all have a good night. Good night everybody.
(Whereupon, the proceedings were adjourned to May 16, 2000.)

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